



## SEQUENCE LISTING

<110> ICHINOSE, MASAKAZU  
OGAWA, HIROMASA  
TOMAKI, MASAFUMI  
UNO, YUMIKO  
FURUSAWA, MAKOTO  
MATSUMOTO, TATSUMI

<120> PREVENTIVE/REMEDY FOR RESPIRATORY DISEASES

<130> 66314(46342)

<140> 10/594,266

<141> 2007-03-21

<150> PCT/JP2005/006444

<151> 2005-03-25

<150> JP 2004-092064

<151> 2004-03-26

<160> 74

<170> PatentIn version 3.5

<210> 1

<211> 816

<212> DNA

<213> Homo sapiens

<400> 1

atgagctgcc acaactgctc cgacccccag gtcctttgca gctccgggca gctgttcctg	60
cagccctctt gggaccacct gaggagctgg gaggccctcc tacagtcgcc cttcttcccg	120
gtcatcttct ccatcaccac atacgtgggc ttttgccctgc ccttcgtggt cctggatata	180
ctgtgctcct gggtgccgc cctgcccgc tacaagatcc accctgactt ctgccatcc	240
gcgagcagc tgctaccttg cctggggcag accctctacc agcatgtgat gtttgtgttc	300
cccgtgacgc tgctgcattg ggcccgcag ccggccctcc tgccccacga agctcccgag	360
ctgctcctgc tgctgcacca catcctgttc tgccctgtac tcttcgacat ggagttcttc	420
gtgtggcacc tgctgcacca caaggtgccc tggtgtgacc gcaccttcca caaggtgcac	480
caccagaact cgtcctcgtt cgcgctggca acgcagtata tgagcgtctg ggaactgttt	540
tctttgggct tcttcgacat gatgaacgtc aactgctcg ggtgccacc gctcaccacc	600
ctgaccttcc acgtgggtcaa catctggctt tccgtggagg accactccgg ctacaacttc	660
ccttgggtcca ctacagact ggtgcccttc ggggtgtgac ggggtgtggt gcaccacgac	720
ctgcatcaact ctcaacttta ctgcaacttc gctccgtact ttacacactg ggacaaaata	780

ctgggaacgc tgcggactgc atctgtccca gcgcgg

816

<210> 2

<211> 272

<212> PRT

<213> Homo sapiens

<400> 2

Met Ser Cys His Asn Cys Ser Asp Pro Gln Val Leu Cys Ser Ser Gly  
1 5 10 15

Gln Leu Phe Leu Gln Pro Leu Trp Asp His Leu Arg Ser Trp Glu Ala  
20 25 30

Leu Leu Gln Ser Pro Phe Phe Pro Val Ile Phe Ser Ile Thr Thr Tyr  
35 40 45

Val Gly Phe Cys Leu Pro Phe Val Val Leu Asp Ile Leu Cys Ser Trp  
50 55 60

Val Pro Ala Leu Arg Arg Tyr Lys Ile His Pro Asp Phe Ser Pro Ser  
65 70 75 80

Ala Gln Gln Leu Leu Pro Cys Leu Gly Gln Thr Leu Tyr Gln His Val  
85 90 95

Met Phe Val Phe Pro Val Thr Leu Leu His Trp Ala Arg Ser Pro Ala  
100 105 110

Leu Leu Pro His Glu Ala Pro Glu Leu Leu Leu Leu His His Ile  
115 120 125

Leu Phe Cys Leu Leu Leu Phe Asp Met Glu Phe Phe Val Trp His Leu  
130 135 140

Leu His His Lys Val Pro Trp Leu Tyr Arg Thr Phe His Lys Val His  
145 150 155 160

His Gln Asn Ser Ser Ser Phe Ala Leu Ala Thr Gln Tyr Met Ser Val  
165 170 175

Trp Glu Leu Phe Ser Leu Gly Phe Phe Asp Met Met Asn Val Thr Leu  
180 185 190

Leu Gly Cys His Pro Leu Thr Thr Leu Thr Phe His Val Val Asn Ile  
 195 200 205

Trp Leu Ser Val Glu Asp His Ser Gly Tyr Asn Phe Pro Trp Ser Thr  
 210 215 220

His Arg Leu Val Pro Phe Gly Trp Tyr Gly Gly Val Val His His Asp  
 225 230 235 240

Leu His His Ser His Phe Asn Cys Asn Phe Ala Pro Tyr Phe Thr His  
 245 250 255

Trp Asp Lys Ile Leu Gly Thr Leu Arg Thr Ala Ser Val Pro Ala Arg  
 260 265 270

<210> 3

<211> 924

<212> DNA

<213> Homo sapiens

<400> 3

atgcccgggc aagaactcag gacgctgaat ggctctcaga tgctcctggt gttgctgggtg	60
ctctcgtggc tgccgcatgg gggcgccctg tctctggccg aggcgagccg cgcaagtttc	120
ccgggaccct cagagttgca ctccgaagac tccagattcc gagagttgcg gaaacgctac	180
gaggacctgc taaccaggct gcggggccaac cagagctggg aagattcgaa caccgacctc	240
gtcccgggcc ctgcagtccg gatactcacg ccagaagtgc ggctgggatc cggcgggccac	300
ctgcacctgc gtatctctcg ggccgcccctt cctgaggggc tccccgaggc ctcccgcctt	360
caccgggctc tggtccggct gtccccgacg gcgtcaaggt cgtgggacgt gacacgaccg	420
ctgcggcgtc agctcagcct tgcaagaccc caggcgcccg cgctgcacct gcgactgtcg	480
ccgccgccgt cgcagtcgga ccaactgctg gcagaatctt cgtccgcacg gcccagctg	540
gagttgcact tgcggccgca agccgccagg gggcgccgca gagcgcgctgc gcgcaacggg	600
gaccactgtc cgctcggggc cgggcgttgc tgccgtctgc acacgggtccg cgcgtcgtcg	660
gaagacctgg gctggggccga ttgggtgctg tgcgcacggg aggtgcaagt gaccatgtgc	720
atcggcgcgt gcccgagcca gttccggggc gcaaacatgc acgcgcagat caagacgagc	780
ctgcaccgcc tgaagcccga cacggtgccg gcgcctgct gcgtgcccgc cagctacaat	840
cccatggtgc tcattcaaaa gaccgacacc ggggtgtcgc tccagacctg tgatgacttg	900
ttagccaaag actgccactg cata	924

<210> 4  
 <211> 308  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Met Pro Gly Gln Glu Leu Arg Thr Leu Asn Gly Ser Gln Met Leu Leu  
 1 5 10 15

Val Leu Leu Val Leu Ser Trp Leu Pro His Gly Gly Ala Leu Ser Leu  
 20 25 30

Ala Glu Ala Ser Arg Ala Ser Phe Pro Gly Pro Ser Glu Leu His Ser  
 35 40 45

Glu Asp Ser Arg Phe Arg Glu Leu Arg Lys Arg Tyr Glu Asp Leu Leu  
 50 55 60

Thr Arg Leu Arg Ala Asn Gln Ser Trp Glu Asp Ser Asn Thr Asp Leu  
 65 70 75 80

Val Pro Ala Pro Ala Val Arg Ile Leu Thr Pro Glu Val Arg Leu Gly  
 85 90 95

Ser Gly Gly His Leu His Leu Arg Ile Ser Arg Ala Ala Leu Pro Glu  
 100 105 110

Gly Leu Pro Glu Ala Ser Arg Leu His Arg Ala Leu Phe Arg Leu Ser  
 115 120 125

Pro Thr Ala Ser Arg Ser Trp Asp Val Thr Arg Pro Leu Arg Arg Gln  
 130 135 140

Leu Ser Leu Ala Arg Pro Gln Ala Pro Ala Leu His Leu Arg Leu Ser  
 145 150 155 160

Pro Pro Pro Ser Gln Ser Asp Gln Leu Leu Ala Glu Ser Ser Ser Ala  
 165 170 175

Arg Pro Gln Leu Glu Leu His Leu Arg Pro Gln Ala Ala Arg Gly Arg  
 180 185 190

Arg Arg Ala Arg Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly  
 195 200 205

Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly  
 210 215 220

Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys  
 225 230 235 240

Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln  
 245 250 255

Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro  
 260 265 270

Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr  
 275 280 285

Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp  
 290 295 300

Cys His Cys Ile  
 305

<210> 5

<211> 621

<212> DNA

<213> Homo sapiens

<400> 5

atggctggac ctgccaccca gagcccatg aagctgatgg ccctgcagct gctgctgtgg	60
cacagtgcac tctggacagt gcaggaagcc acccccctgg gccctgccag ctccctgccc	120
cagagcttcc tgctcaagtg cttagagcaa gtgaggaaga tccagggcga tggcgcagcg	180
ctccaggaga agctggtgag tgagtgtgcc acctacaagc tgtgccaccc cgaggagctg	240
gtgctgctcg gacactctct gggcatcccc tgggctcccc tgagcagctg cccagccag	300
gccctgcagc tggcaggctg cttgagccaa ctccatagcg gccttttctt ctaccagggg	360
ctcctgcagg ccctggaagg gatctcccc gagttgggtc ccaccttgga cacactgcag	420
ctggacgtcg ccgactttgc caccaccatc tggcagcaga tggaagaact gggaatggcc	480
cctgccctgc agccaccca gggtgccatg ccggccttcg cctctgcttt ccagcgccgg	540
gcaggagggg tcttggttgc ctcccatctg cagagcttcc tggaggtgtc gtaccgcgtt	600
ctacgccacc ttgcccagcc c	621

<210> 6  
 <211> 207  
 <212> PRT  
 <213> Homo sapiens

<400> 6  
 Met Ala Gly Pro Ala Thr Gln Ser Pro Met Lys Leu Met Ala Leu Gln  
 1 5 10 15

Leu Leu Leu Trp His Ser Ala Leu Trp Thr Val Gln Glu Ala Thr Pro  
 20 25 30

Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu Lys Cys Leu  
 35 40 45

Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu Gln Glu Lys  
 50 55 60

Leu Val Ser Glu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu  
 65 70 75 80

Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser  
 85 90 95

Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His  
 100 105 110

Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile  
 115 120 125

Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala  
 130 135 140

Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala  
 145 150 155 160

Pro Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala  
 165 170 175

Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser  
 180 185 190

Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 195 200 205

<210> 7  
 <211> 696  
 <212> DNA  
 <213> Homo sapiens

<400> 7  
 atgaaggaga gacgggcccc ccagccagtc gtggccagat gtaagctcgt tctggtcggg 60  
 gacgtgcagt gtgggaagac cgcgatgttg caagtgttag cgaaggattg ctatccagag 120  
 acctatgtgc ccaccgtgtt cgaaaattac acagcctgtt tggagacaga ggaacagagg 180  
 gtggagctta gtctctggga tacctcagga tctccctact acgataatgt ccgtccactc 240  
 tgctacagcg actcggatgc agtattacta tgttttgaca tcagccgtcc agagacagtg 300  
 gacagcgcac tcaagaagtg gaggacagaa atcctagatt attgtcccag caccgcggtt 360  
 ttgctcattg gctgcaagac agacctgcga acagacctga gtactctgat ggagctgtcc 420  
 caccagaagc aggcgcccat ctcctatgag cagggttgtg caatagcaaa gcagctgggt 480  
 gcagaaatct acctggaagg ctacgctttc acctcagaaa agagcatcca cagcatcttt 540  
 cggacggcat ccatgctgtg tctgaacaag cctagcccac tgcccagaa gagccctgtc 600  
 cgaagcctct ccaaacgact gtcacacctc cccagtcgct ctgaactcat ctcttctacc 660  
 ttcaagaagg aaaaggccaa aagctgttcc attatg 696

<210> 8  
 <211> 232  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 Met Lys Glu Arg Arg Ala Pro Gln Pro Val Val Ala Arg Cys Lys Leu  
 1 5 10 15  
 Val Leu Val Gly Asp Val Gln Cys Gly Lys Thr Ala Met Leu Gln Val  
 20 25 30  
 Leu Ala Lys Asp Cys Tyr Pro Glu Thr Tyr Val Pro Thr Val Phe Glu  
 35 40 45  
 Asn Tyr Thr Ala Cys Leu Glu Thr Glu Glu Gln Arg Val Glu Leu Ser  
 50 55 60  
 Leu Trp Asp Thr Ser Gly Ser Pro Tyr Tyr Asp Asn Val Arg Pro Leu  
 65 70 75 80

Cys Tyr Ser Asp Ser Asp Ala Val Leu Leu Cys Phe Asp Ile Ser Arg  
85 90 95

Pro Glu Thr Val Asp Ser Ala Leu Lys Lys Trp Arg Thr Glu Ile Leu  
100 105 110

Asp Tyr Cys Pro Ser Thr Arg Val Leu Leu Ile Gly Cys Lys Thr Asp  
115 120 125

Leu Arg Thr Asp Leu Ser Thr Leu Met Glu Leu Ser His Gln Lys Gln  
130 135 140

Ala Pro Ile Ser Tyr Glu Gln Gly Cys Ala Ile Ala Lys Gln Leu Gly  
145 150 155 160

Ala Glu Ile Tyr Leu Glu Gly Ser Ala Phe Thr Ser Glu Lys Ser Ile  
165 170 175

His Ser Ile Phe Arg Thr Ala Ser Met Leu Cys Leu Asn Lys Pro Ser  
180 185 190

Pro Leu Pro Gln Lys Ser Pro Val Arg Ser Leu Ser Lys Arg Leu Leu  
195 200 205

His Leu Pro Ser Arg Ser Glu Leu Ile Ser Ser Thr Phe Lys Lys Glu  
210 215 220

Lys Ala Lys Ser Cys Ser Ile Met  
225 230

<210> 9

<211> 744

<212> DNA

<213> Homo sapiens

<400> 9

atggagagag ccagtctgat ccagaaggcc aagctggcag agcaggccga acgctatgag 60

gacatggcag ccttcatgaa aggcgccgtg gagaagggcg aggagctctc ctgcgaagag 120

cgaaacctgc tctcagtagc ctataagaac gtggtgggcg gccagagggc tgcttgagg 180

gtgctgtcca gtattgagca gaaaagcaac gaggagggct cggaggagaa ggggcccag 240

gtgcgtgagt accgggagaa ggtggagact gagctccagg gcgtgtgcga caccgtgctg 300

ggcctgctgg acagccacct catcaaggag gccggggacg ccgagagccg ggtcttctac 360



```

ctgaagatga aggggtgacta ctaccgctac ctggccgagg tggccaccgg tgacgacaag      420
aagcgcacatca ttgactcagc ccggtcagcc taccaggagg ccatggacat cagcaagaag      480
gagatgccgc ccaccaaccc catccgcctg ggccctggccc tgaacttttc cgtcttccac      540
tacgagatcg ccaacagccc cgaggaggcc atctctcttg ccaagaccac tttcgacgag      600
gccatggctg atctgcacac cctcagcgag gactcctaca aagacagcac cctcatcatg      660
cagctgctgc gagacaacct gacactgtgg acggccgaca acgccgggga agaggggggc      720
gaggctcccc aggagcccca gagc                                             744

```

```

<210> 10
<211> 248
<212> PRT
<213> Homo sapiens

```

```

<400> 10
Met Glu Arg Ala Ser Leu Ile Gln Lys Ala Lys Leu Ala Glu Gln Ala
1              5              10              15

```

```

Glu Arg Tyr Glu Asp Met Ala Ala Phe Met Lys Gly Ala Val Glu Lys
                20              25              30

```

```

Gly Glu Glu Leu Ser Cys Glu Glu Arg Asn Leu Leu Ser Val Ala Tyr
    35              40              45

```

```

Lys Asn Val Val Gly Gly Gln Arg Ala Ala Trp Arg Val Leu Ser Ser
    50              55              60

```

```

Ile Glu Gln Lys Ser Asn Glu Glu Gly Ser Glu Glu Lys Gly Pro Glu
65              70              75              80

```

```

Val Arg Glu Tyr Arg Glu Lys Val Glu Thr Glu Leu Gln Gly Val Cys
                85              90              95

```

```

Asp Thr Val Leu Gly Leu Leu Asp Ser His Leu Ile Lys Glu Ala Gly
                100             105             110

```

```

Asp Ala Glu Ser Arg Val Phe Tyr Leu Lys Met Lys Gly Asp Tyr Tyr
    115              120             125

```

```

Arg Tyr Leu Ala Glu Val Ala Thr Gly Asp Asp Lys Lys Arg Ile Ile
    130              135             140

```

Asp Ser Ala Arg Ser Ala Tyr Gln Glu Ala Met Asp Ile Ser Lys Lys  
 145 150 155 160

Glu Met Pro Pro Thr Asn Pro Ile Arg Leu Gly Leu Ala Leu Asn Phe  
 165 170 175

Ser Val Phe His Tyr Glu Ile Ala Asn Ser Pro Glu Glu Ala Ile Ser  
 180 185 190

Leu Ala Lys Thr Thr Phe Asp Glu Ala Met Ala Asp Leu His Thr Leu  
 195 200 205

Ser Glu Asp Ser Tyr Lys Asp Ser Thr Leu Ile Met Gln Leu Leu Arg  
 210 215 220

Asp Asn Leu Thr Leu Trp Thr Ala Asp Asn Ala Gly Glu Glu Gly Gly  
 225 230 235 240

Glu Ala Pro Gln Glu Pro Gln Ser  
 245

<210> 11  
 <211> 819  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
 atgggtcaga aggtcactgg agggatcaag actgtggaca tgagggaccc cacgtacagg 60  
 cccctgaagc aggagctcca gggctctggat tactgcaagc ccacccggct ggatctgcta 120  
 ctggacatgc cccctgtgtc ctatgatgtc cagctgctgc attcatggaa caacaacgac 180  
 cgatcgctca atgtctttgt gaaggaggac gacaagctca tctttcaccg gcatccggtg 240  
 gccagagca cggacgctat caggggcaaa gtcgggtata cccgtgggct gcacgtgtgg 300  
 cagatcacgt gggccatgag acagcggggc acacacgccg tgggtgggggt ggcgacggca 360  
 gacgcccccc tgcactctgt cgggtacaca accctcgtgg ggaataacca cgagtcctgg 420  
 ggctgggact tggggcgcaa ccggctctac cacgatggca agaaccagcc aagcaaaaca 480  
 taccagcct ttctggaacc agatgagaca ttcatgtgcc ctgactcctt cctggtagcc 540  
 ctggacatgg acgacgggac tctgagcttc attgtggatg gacagtacat gggagtggct 600  
 tttcggggac tcaagggcaa aaaactgtat cctgtagtga gtgccgtctg gggccactgt 660  
 gagatccgaa tgcgtactt gaacggactc gatcccagac cgctgccgct catggatttg 720

tgccgtcgct cggtgcgct gccctgggg agggagcgcc tgggggagat ccacacgctg 780  
 ccgctgccgg cttccctcaa ggcctacctc ctctaccag 819

<210> 12  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

<400> 12  
 Met Gly Gln Lys Val Thr Gly Gly Ile Lys Thr Val Asp Met Arg Asp  
 1 5 10 15

Pro Thr Tyr Arg Pro Leu Lys Gln Glu Leu Gln Gly Leu Asp Tyr Cys  
 20 25 30

Lys Pro Thr Arg Leu Asp Leu Leu Leu Asp Met Pro Pro Val Ser Tyr  
 35 40 45

Asp Val Gln Leu Leu His Ser Trp Asn Asn Asn Asp Arg Ser Leu Asn  
 50 55 60

Val Phe Val Lys Glu Asp Asp Lys Leu Ile Phe His Arg His Pro Val  
 65 70 75 80

Ala Gln Ser Thr Asp Ala Ile Arg Gly Lys Val Gly Tyr Thr Arg Gly  
 85 90 95

Leu His Val Trp Gln Ile Thr Trp Ala Met Arg Gln Arg Gly Thr His  
 100 105 110

Ala Val Val Gly Val Ala Thr Ala Asp Ala Pro Leu His Ser Val Gly  
 115 120 125

Tyr Thr Thr Leu Val Gly Asn Asn His Glu Ser Trp Gly Trp Asp Leu  
 130 135 140

Gly Arg Asn Arg Leu Tyr His Asp Gly Lys Asn Gln Pro Ser Lys Thr  
 145 150 155 160

Tyr Pro Ala Phe Leu Glu Pro Asp Glu Thr Phe Ile Val Pro Asp Ser  
 165 170 175

Phe Leu Val Ala Leu Asp Met Asp Asp Gly Thr Leu Ser Phe Ile Val  
 180 185 190

Asp Gly Gln Tyr Met Gly Val Ala Phe Arg Gly Leu Lys Gly Lys Lys  
 195 200 205

Leu Tyr Pro Val Val Ser Ala Val Trp Gly His Cys Glu Ile Arg Met  
 210 215 220

Arg Tyr Leu Asn Gly Leu Asp Pro Glu Pro Leu Pro Leu Met Asp Leu  
 225 230 235 240

Cys Arg Arg Ser Val Arg Leu Ala Leu Gly Arg Glu Arg Leu Gly Glu  
 245 250 255

Ile His Thr Leu Pro Leu Pro Ala Ser Leu Lys Ala Tyr Leu Leu Tyr  
 260 265 270

Gln

<210> 13  
 <211> 2370  
 <212> DNA  
 <213> Homo sapiens

<400> 13  
 atggctgaac aagtccttcc tcaggctttg tatttgagca atatgcggaa agctgtgaag 60  
 atacgggaga gaactccaga agacattttt aaacctacta atgggatcat tcatcatttt 120  
 aaaaccatgc accgatacac actggaaatg ttcagaactt gccagttttg tcctcagttt 180  
 cgggagatca tccacaaagc cctcatcgac agaaacatcc aggccaccct ggaaagccag 240  
 aagaaactca actggtgtcg agaagtccgg aagcttgtgg cgctgaaaac gaacggtgac 300  
 ggcaattgcc tcatgcatgc cacttctcag tacatgtggg gcgttcagga cacagacttg 360  
 gtactgagga aggcgctgtt cagcacgctc aaggaaacag acacacgcaa ctttaaattc 420  
 cgctggcaac tggagtctct caaatctcag gaatttggtg aaacggggct ttgctatgat 480  
 actcggaaact ggaatgatga atgggacaat cttatcaaaa tggcttccac agacacaccc 540  
 atggcccga gtaggacttca gtacaactca ctggaagaaa tacacatatt tgccttttgc 600  
 aacatcctca gaaggccaat cattgtcatt tcagacaaaa tgctaagaag tttggaatca 660  
 ggttccaatt tcgccccttt gaaagtgggt ggaatttact tgcctctcca ctggcctgcc 720  
 caggaatgct acagataccc cattgttctc ggctatgaca gccatcattt tgtacccttg 780  
 gtgaccctga aggacagtgg gcctgaaatc cgagctgttc cacttgtaa cagagaccgg 840

```

ggaagatttg aagacttaaa agttcacttt ttgacagatc ctgaaaatga gatgaaggag      900
aagctcttaa aagagtactt aatggtgata gaaatccccg tccaaggctg ggaccatggc      960
acaactcatc tcatcaatgc cgcaaagttg gatgaagcta acttaccaa agaaatcaat     1020
ctggtagatg attactttga acttgttcag catgagtaca agaaatggca ggaaaacagc     1080
gagcagggga ggagagaggg gcacgcccag aatcccatgg aaccttcctg gccccagctt     1140
tctctcatgg atgtaaaatg tgaaacgccc aactgcccct tcttcatgtc tgtgaacacc     1200
cagcctttat gccatgagtg ctgagagagg cggcaaaaaga atcaaaaaca actcccaaag     1260
ctgaactcca agccggggccc tgagggggctc cctggcatgg cgctcggggc ctctcgggga     1320
gaagcctatg agcccttggc gtggaaccct gaggagtcca ctggggggcc tcattcggcc     1380
ccaccgacag caccagccc ttttctgttc agtgagacca ctgcatgaa gtgcaggagc     1440
cccggctgcc ccttcacact gaatgtgcag cacaacggat tttgtgaacg ttgccacaac     1500
gcccggcaac ttcacgccag ccacgcccc aaccacacaa ggcaactgga tcccggaag     1560
tgccaagcct gcctccagga tgttaccagg acatttaatg ggatctgcag tacttgcttc     1620
aaaaggacta cagcagaggc ctctccagc ctgacacca gcctccctcc ttctgtcac     1680
cagcgttcca agtcagatcc ctgcgggctc gtccggagcc cctccccgca ttcttgccac     1740
agagctggaa acgacgcccc tgctggctgc ctgtctcaag ctgcacggac tcctggggac     1800
aggacgggga cgagcaagtg cagaaaagcc ggctgcgtgt attttgggac tccagaaaac     1860
aagggtttt gcacactgtg tttcatcgag tacagagaaa acaaacattt tgctgctgcc     1920
tcagggaaag tcagtccac agcgtccagg ttccagaaca ccattccgtg cctggggagg     1980
gaatgcggca cccttggaag caccatgttt gaaggatact gccagaagtg tttcattgaa     2040
gctcagaatc agagatttca tgaggccaaa aggacagaag agcaactgag atcgagccag     2100
cgcagagatg tgctcgaac cacacaaagc acctcaaggc ccaagtgcgc ccgggcctcc     2160
tgcaagaaca tcctggcctg ccgcagcgag gagctctgca tggagtgtca gcatcccaac     2220
cagaggatgg gccctggggc ccaccggggt gagcctgccc ccgaagacc cccaagcag     2280
cgttgccggg ccccgccctg tgatcatttt ggcaatgcca agtgcaacgg ctactgcaac     2340
gaatgctttc agttcaagca gatgtatggc      2370

```

<210> 14

<211> 790

<212> PRT

<213> Homo sapiens

&lt;400&gt; 14

Met Ala Glu Gln Val Leu Pro Gln Ala Leu Tyr Leu Ser Asn Met Arg  
 1 5 10 15

Lys Ala Val Lys Ile Arg Glu Arg Thr Pro Glu Asp Ile Phe Lys Pro  
 20 25 30

Thr Asn Gly Ile Ile His His Phe Lys Thr Met His Arg Tyr Thr Leu  
 35 40 45

Glu Met Phe Arg Thr Cys Gln Phe Cys Pro Gln Phe Arg Glu Ile Ile  
 50 55 60

His Lys Ala Leu Ile Asp Arg Asn Ile Gln Ala Thr Leu Glu Ser Gln  
 65 70 75 80

Lys Lys Leu Asn Trp Cys Arg Glu Val Arg Lys Leu Val Ala Leu Lys  
 85 90 95

Thr Asn Gly Asp Gly Asn Cys Leu Met His Ala Thr Ser Gln Tyr Met  
 100 105 110

Trp Gly Val Gln Asp Thr Asp Leu Val Leu Arg Lys Ala Leu Phe Ser  
 115 120 125

Thr Leu Lys Glu Thr Asp Thr Arg Asn Phe Lys Phe Arg Trp Gln Leu  
 130 135 140

Glu Ser Leu Lys Ser Gln Glu Phe Val Glu Thr Gly Leu Cys Tyr Asp  
 145 150 155 160

Thr Arg Asn Trp Asn Asp Glu Trp Asp Asn Leu Ile Lys Met Ala Ser  
 165 170 175

Thr Asp Thr Pro Met Ala Arg Ser Gly Leu Gln Tyr Asn Ser Leu Glu  
 180 185 190

Glu Ile His Ile Phe Val Leu Cys Asn Ile Leu Arg Arg Pro Ile Ile  
 195 200 205

Val Ile Ser Asp Lys Met Leu Arg Ser Leu Glu Ser Gly Ser Asn Phe  
 210 215 220

Ala Pro Leu Lys Val Gly Gly Ile Tyr Leu Pro Leu His Trp Pro Ala  
225 230 235 240

Gln Glu Cys Tyr Arg Tyr Pro Ile Val Leu Gly Tyr Asp Ser His His  
245 250 255

Phe Val Pro Leu Val Thr Leu Lys Asp Ser Gly Pro Glu Ile Arg Ala  
260 265 270

Val Pro Leu Val Asn Arg Asp Arg Gly Arg Phe Glu Asp Leu Lys Val  
275 280 285

His Phe Leu Thr Asp Pro Glu Asn Glu Met Lys Glu Lys Leu Leu Lys  
290 295 300

Glu Tyr Leu Met Val Ile Glu Ile Pro Val Gln Gly Trp Asp His Gly  
305 310 315 320

Thr Thr His Leu Ile Asn Ala Ala Lys Leu Asp Glu Ala Asn Leu Pro  
325 330 335

Lys Glu Ile Asn Leu Val Asp Asp Tyr Phe Glu Leu Val Gln His Glu  
340 345 350

Tyr Lys Lys Trp Gln Glu Asn Ser Glu Gln Gly Arg Arg Glu Gly His  
355 360 365

Ala Gln Asn Pro Met Glu Pro Ser Val Pro Gln Leu Ser Leu Met Asp  
370 375 380

Val Lys Cys Glu Thr Pro Asn Cys Pro Phe Phe Met Ser Val Asn Thr  
385 390 395 400

Gln Pro Leu Cys His Glu Cys Ser Glu Arg Arg Gln Lys Asn Gln Asn  
405 410 415

Lys Leu Pro Lys Leu Asn Ser Lys Pro Gly Pro Glu Gly Leu Pro Gly  
420 425 430

Met Ala Leu Gly Ala Ser Arg Gly Glu Ala Tyr Glu Pro Leu Ala Trp  
435 440 445

Asn Pro Glu Glu Ser Thr Gly Gly Pro His Ser Ala Pro Pro Thr Ala  
450 455 460

Pro Ser Pro Phe Leu Phe Ser Glu Thr Thr Ala Met Lys Cys Arg Ser  
465 470 475 480

Pro Gly Cys Pro Phe Thr Leu Asn Val Gln His Asn Gly Phe Cys Glu  
485 490 495

Arg Cys His Asn Ala Arg Gln Leu His Ala Ser His Ala Pro Asp His  
500 505 510

Thr Arg His Leu Asp Pro Gly Lys Cys Gln Ala Cys Leu Gln Asp Val  
515 520 525

Thr Arg Thr Phe Asn Gly Ile Cys Ser Thr Cys Phe Lys Arg Thr Thr  
530 535 540

Ala Glu Ala Ser Ser Ser Leu Ser Thr Ser Leu Pro Pro Ser Cys His  
545 550 555 560

Gln Arg Ser Lys Ser Asp Pro Ser Arg Leu Val Arg Ser Pro Ser Pro  
565 570 575

His Ser Cys His Arg Ala Gly Asn Asp Ala Pro Ala Gly Cys Leu Ser  
580 585 590

Gln Ala Ala Arg Thr Pro Gly Asp Arg Thr Gly Thr Ser Lys Cys Arg  
595 600 605

Lys Ala Gly Cys Val Tyr Phe Gly Thr Pro Glu Asn Lys Gly Phe Cys  
610 615 620

Thr Leu Cys Phe Ile Glu Tyr Arg Glu Asn Lys His Phe Ala Ala Ala  
625 630 635 640

Ser Gly Lys Val Ser Pro Thr Ala Ser Arg Phe Gln Asn Thr Ile Pro  
645 650 655

Cys Leu Gly Arg Glu Cys Gly Thr Leu Gly Ser Thr Met Phe Glu Gly  
660 665 670

Tyr Cys Gln Lys Cys Phe Ile Glu Ala Gln Asn Gln Arg Phe His Glu  
675 680 685



Ala Lys Arg Thr Glu Glu Gln Leu Arg Ser Ser Gln Arg Arg Asp Val  
690 695 700

Pro Arg Thr Thr Gln Ser Thr Ser Arg Pro Lys Cys Ala Arg Ala Ser  
705 710 715 720

Cys Lys Asn Ile Leu Ala Cys Arg Ser Glu Glu Leu Cys Met Glu Cys  
725 730 735

Gln His Pro Asn Gln Arg Met Gly Pro Gly Ala His Arg Gly Glu Pro  
740 745 750

Ala Pro Glu Asp Pro Pro Lys Gln Arg Cys Arg Ala Pro Ala Cys Asp  
755 760 765

His Phe Gly Asn Ala Lys Cys Asn Gly Tyr Cys Asn Glu Cys Phe Gln  
770 775 780

Phe Lys Gln Met Tyr Gly  
785 790

<210> 15

<211> 831

<212> DNA

<213> Homo sapiens

<400> 15

atgatcatct taatttactt atttctcttg ctatgggaag acactcaagg atggggattc	60
aaggatggaa tttttcataa ctccatatgg cttgaacgag cagccggtgt gtaccacaga	120
gaagcacggt ctggcaaata caagctcacc tacgcagaag ctaaggcgggt gtgtgaattt	180
gaaggcggcc atctcgcaac ttacaagcag ctagaggcag ccagaaaaat tggatttcat	240
gtctgtgctg ctggatggat ggctaagggc agagttggat accccattgt gaagccaggg	300
cccaactgtg gatttggaat aactggcatt attgattatg gaatccgtct caataggagt	360
gaaagatggg atgcctattg ctacaacca cagcaaaagg agtgtggtgg cgtctttaca	420
gatccaaagc aaatttttta atctccaggc ttcccaaagt agtacgaaga taaccaaadc	480
tgctactggc acattagact caagtatggt cagcgtattc acctgagttt tttagatttt	540
gaccttgaag atgaccaggg ttgcttggct gattatgttg aaatatatga cagttacgat	600
gatgtccatg gctttgtggg aagatactgt ggagatgagc ttccagatga catcatcagt	660
acaggaaatg tcatgacctt gaagtttcta agtgatgctt cagtgcacgc tggaggtttc	720

caaatcaa atgttgcaat ggatcctgta tccaaatcca gtcaaggaaa aaatacaagt 780  
 actactttcta ctggaaataa aaactttttta gctggaagat ttagccactt a 831

<210> 16  
 <211> 277  
 <212> PRT  
 <213> Homo sapiens

<400> 16  
 Met Ile Ile Leu Ile Tyr Leu Phe Leu Leu Leu Trp Glu Asp Thr Gln  
 1 5 10 15

Gly Trp Gly Phe Lys Asp Gly Ile Phe His Asn Ser Ile Trp Leu Glu  
 20 25 30

Arg Ala Ala Gly Val Tyr His Arg Glu Ala Arg Ser Gly Lys Tyr Lys  
 35 40 45

Leu Thr Tyr Ala Glu Ala Lys Ala Val Cys Glu Phe Glu Gly Gly His  
 50 55 60

Leu Ala Thr Tyr Lys Gln Leu Glu Ala Ala Arg Lys Ile Gly Phe His  
 65 70 75 80

Val Cys Ala Ala Gly Trp Met Ala Lys Gly Arg Val Gly Tyr Pro Ile  
 85 90 95

Val Lys Pro Gly Pro Asn Cys Gly Phe Gly Lys Thr Gly Ile Ile Asp  
 100 105 110

Tyr Gly Ile Arg Leu Asn Arg Ser Glu Arg Trp Asp Ala Tyr Cys Tyr  
 115 120 125

Asn Pro His Ala Lys Glu Cys Gly Gly Val Phe Thr Asp Pro Lys Gln  
 130 135 140

Ile Phe Lys Ser Pro Gly Phe Pro Asn Glu Tyr Glu Asp Asn Gln Ile  
 145 150 155 160

Cys Tyr Trp His Ile Arg Leu Lys Tyr Gly Gln Arg Ile His Leu Ser  
 165 170 175

Phe Leu Asp Phe Asp Leu Glu Asp Asp Pro Gly Cys Leu Ala Asp Tyr  
 180 185 190

Val Glu Ile Tyr Asp Ser Tyr Asp Asp Val His Gly Phe Val Gly Arg  
 195 200 205

Tyr Cys Gly Asp Glu Leu Pro Asp Asp Ile Ile Ser Thr Gly Asn Val  
 210 215 220

Met Thr Leu Lys Phe Leu Ser Asp Ala Ser Val Thr Ala Gly Gly Phe  
 225 230 235 240

Gln Ile Lys Tyr Val Ala Met Asp Pro Val Ser Lys Ser Ser Gln Gly  
 245 250 255

Lys Asn Thr Ser Thr Thr Ser Thr Gly Asn Lys Asn Phe Leu Ala Gly  
 260 265 270

Arg Phe Ser His Leu  
 275

<210> 17  
 <211> 468  
 <212> DNA  
 <213> Homo sapiens

<400> 17  
 atgtgtcact ctgcgagctg ccacccgacc atgaccatcc tgcaggcccc gaccccggcc 60  
 ccctccacca tcccgggacc ccggcggggc tccggctcctg agatcttcac ctctgacct 120  
 ctcccggagc ccgcagcggc ccctgccggg cgccccagcg cctctcgcgg gcaccgaaag 180  
 cgcagccgca gggttctcta ccctcgagtg gtcggcgccc agctgccagt cgaggaaccg 240  
 aaccagcca aaaggcttct ctttctgctg ctcaccatcg tcttctgcca gatcctgatg 300  
 gctgaagagg gtgtgccggc gccctgcct ccagaggacg cccctaacgc cgcattcctg 360  
 gcgcccaccc ctgtgtcccc cgtcctcgag ccctttaatc tgacttcgga gccctcggac 420  
 tacgctctgg acctcagcac tttcctccag caacacccgg ccgccttc 468

<210> 18  
 <211> 156  
 <212> PRT  
 <213> Homo sapiens

<400> 18  
 Met Cys His Ser Arg Ser Cys His Pro Thr Met Thr Ile Leu Gln Ala  
 1 5 10 15

Pro Thr Pro Ala Pro Ser Thr Ile Pro Gly Pro Arg Arg Gly Ser Gly  
20 25 30

Pro Glu Ile Phe Thr Phe Asp Pro Leu Pro Glu Pro Ala Ala Ala Pro  
35 40 45

Ala Gly Arg Pro Ser Ala Ser Arg Gly His Arg Lys Arg Ser Arg Arg  
50 55 60

Val Leu Tyr Pro Arg Val Val Arg Arg Gln Leu Pro Val Glu Glu Pro  
65 70 75 80

Asn Pro Ala Lys Arg Leu Leu Phe Leu Leu Leu Thr Ile Val Phe Cys  
85 90 95

Gln Ile Leu Met Ala Glu Glu Gly Val Pro Ala Pro Leu Pro Pro Glu  
100 105 110

Asp Ala Pro Asn Ala Ala Ser Leu Ala Pro Thr Pro Val Ser Pro Val  
115 120 125

Leu Glu Pro Phe Asn Leu Thr Ser Glu Pro Ser Asp Tyr Ala Leu Asp  
130 135 140

Leu Ser Thr Phe Leu Gln Gln His Pro Ala Ala Phe  
145 150 155

<210> 19

<211> 495

<212> DNA

<213> Homo sapiens

<400> 19

atgacttttg aggaattctc ggctggagag cagaagaccg aaaggatgga taaggtgggg 60

gatgccctgg aggaagtgct cagcaaagcc ctgagtcagc gcacgatcac tgtcgggggtg 120

tacgaagcgg ccaagctgct caacgtcgac cccgataacg tgggtgttg cctgctggcg 180

gcggaacgagg acgacgacag agatgtggct ctgcagatcc acttcaccct gatccaggcg 240

ttttgctgcg agaacgacat caacatcctg cgcgtcagca acccgggccg gctggcggag 300

ctcctgctct tggagaccga cgctggcccc gcggcgagcg agggcgccga gcagcccccg 360

gacctgcact gcgtgctggt gacgaatcca cattcatctc aatggaagga tcctgcctta 420

agtcaactta tttgtttttg ccgggaaagt cgctacatgg atcaatgggt tccagtgatt 480

aatctccctg aacgg

495

&lt;210&gt; 20

&lt;211&gt; 165

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 20

Met Thr Leu Glu Glu Phe Ser Ala Gly Glu Gln Lys Thr Glu Arg Met  
 1 5 10 15

Asp Lys Val Gly Asp Ala Leu Glu Glu Val Leu Ser Lys Ala Leu Ser  
 20 25 30

Gln Arg Thr Ile Thr Val Gly Val Tyr Glu Ala Ala Lys Leu Leu Asn  
 35 40 45

Val Asp Pro Asp Asn Val Val Leu Cys Leu Leu Ala Ala Asp Glu Asp  
 50 55 60

Asp Asp Arg Asp Val Ala Leu Gln Ile His Phe Thr Leu Ile Gln Ala  
 65 70 75 80

Phe Cys Cys Glu Asn Asp Ile Asn Ile Leu Arg Val Ser Asn Pro Gly  
 85 90 95

Arg Leu Ala Glu Leu Leu Leu Leu Glu Thr Asp Ala Gly Pro Ala Ala  
 100 105 110

Ser Glu Gly Ala Glu Gln Pro Pro Asp Leu His Cys Val Leu Val Thr  
 115 120 125

Asn Pro His Ser Ser Gln Trp Lys Asp Pro Ala Leu Ser Gln Leu Ile  
 130 135 140

Cys Phe Cys Arg Glu Ser Arg Tyr Met Asp Gln Trp Val Pro Val Ile  
 145 150 155 160

Asn Leu Pro Glu Arg  
 165

&lt;210&gt; 21

&lt;211&gt; 480

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<400> 21  
 atgacgctgg aagagctcgt ggcgtgacgac aacgcggcgc agaagatgca gacggtgacc 60  
 gccgcggtgg aggagctttt ggtggccgct cagcgccagg atcgccctcac agtgggggtg 120  
 tacgagtcgg ccaagttgat gaatgtggac ccagacagcg tggtcctctg cctcttggcc 180  
 attgacgagg aggaggagga tgacatcgcc ctgcaaatcc acttcacgct catccagtcc 240  
 ttctgctgtg acaacgacat caacatcgtg cgggtgtcgg gcatgcagcg cctggcgcag 300  
 ctctggggag agccggccga gaccagggc accaccgagg cccgagacct gcattgtctc 360  
 ctggtcacga accctcacac ggacgcctgg aagagccacg gcttgggtgga ggtggccagc 420  
 tactgcgaag aaagccgggg caacaaccag tgggtcccct acatctctct tcaggaacgc 480

<210> 22  
 <211> 160  
 <212> PRT  
 <213> Homo sapiens

<400> 22  
 Met Thr Leu Glu Glu Leu Val Ala Cys Asp Asn Ala Ala Gln Lys Met  
 1 5 10 15  
 Gln Thr Val Thr Ala Ala Val Glu Glu Leu Leu Val Ala Ala Gln Arg  
 20 25 30  
 Gln Asp Arg Leu Thr Val Gly Val Tyr Glu Ser Ala Lys Leu Met Asn  
 35 40 45  
 Val Asp Pro Asp Ser Val Val Leu Cys Leu Leu Ala Ile Asp Glu Glu  
 50 55 60  
 Glu Glu Asp Asp Ile Ala Leu Gln Ile His Phe Thr Leu Ile Gln Ser  
 65 70 75 80  
 Phe Cys Cys Asp Asn Asp Ile Asn Ile Val Arg Val Ser Gly Met Gln  
 85 90 95  
 Arg Leu Ala Gln Leu Leu Gly Glu Pro Ala Glu Thr Gln Gly Thr Thr  
 100 105 110  
 Glu Ala Arg Asp Leu His Cys Leu Leu Val Thr Asn Pro His Thr Asp  
 115 120 125  
 Ala Trp Lys Ser His Gly Leu Val Glu Val Ala Ser Tyr Cys Glu Glu  
 130 135 140

Ser Arg Gly Asn Asn Gln Trp Val Pro Tyr Ile Ser Leu Gln Glu Arg  
 145 150 155 160

<210> 23  
 <211> 531  
 <212> DNA  
 <213> Homo sapiens

<400> 23  
 atggaaatct gcagaggcct ccgcagtcac ctaatcactc tcctcctctt cctgttccat 60  
 tcagagacga tctgccgacc ctctgggaga aaatccagca agatgcaagc cttcagaatc 120  
 tgggatgtta accagaagac cttctatctg aggaacaacc aactagttgc tggataacttg 180  
 caaggaccaa atgtcaattt agaagaaaag atagatgtgg taccattga gcctcatgct 240  
 ctgttcttgg gaatccatgg agggaagatg tgccctgtcct gtgtcaagtc tggatgatgag 300  
 accagactcc agctggaggc agttaacatc actgacctga gcgagaacag aaagcaggac 360  
 aagcgcttcg ccttcatccg ctcagacagc ggccccacca ccagttttga gtctgccgcc 420  
 tgccccggtt gggttcctctg cacagcgatg gaagctgacc agcccgtcag cctcaccaat 480  
 atgcctgacg aaggcgtcac ggtcaccaaa ttctacttcc aggaggacga g 531

<210> 24  
 <211> 177  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Met Glu Ile Cys Arg Gly Leu Arg Ser His Leu Ile Thr Leu Leu Leu  
 1 5 10 15

Phe Leu Phe His Ser Glu Thr Ile Cys Arg Pro Ser Gly Arg Lys Ser  
 20 25 30

Ser Lys Met Gln Ala Phe Arg Ile Trp Asp Val Asn Gln Lys Thr Phe  
 35 40 45

Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu Gln Gly Pro Asn  
 50 55 60

Val Asn Leu Glu Glu Lys Ile Asp Val Val Pro Ile Glu Pro His Ala  
 65 70 75 80

Leu Phe Leu Gly Ile His Gly Gly Lys Met Cys Leu Ser Cys Val Lys  
85 90 95

Ser Gly Asp Glu Thr Arg Leu Gln Leu Glu Ala Val Asn Ile Thr Asp  
100 105 110

Leu Ser Glu Asn Arg Lys Gln Asp Lys Arg Phe Ala Phe Ile Arg Ser  
115 120 125

Asp Ser Gly Pro Thr Thr Ser Phe Glu Ser Ala Ala Cys Pro Gly Trp  
130 135 140

Phe Leu Cys Thr Ala Met Glu Ala Asp Gln Pro Val Ser Leu Thr Asn  
145 150 155 160

Met Pro Asp Glu Gly Val Met Val Thr Lys Phe Tyr Phe Gln Glu Asp  
165 170 175

Glu

<210> 25  
<211> 594  
<212> DNA  
<213> Homo sapiens

<400> 25  
atgaccctgc ggtgccttga gccctccggg aatggcgggg aaggacgcg gagccagtgg 60  
gggaccgcgg ggtcggcgga ggagccatcc cgcagggcgg cgcgtctggc gaaggccctg 120  
cgggagctcg gtcagacagg atggtactgg ggaagtatga ctgttaatga agccaaagag 180  
aaattaaaag aggaccaga aggaactttc ttgattagag atagctcgca ttcagactac 240  
ctactaaciaa tatctgttaa aacatcagct ggaccaacta atcttcgaat cgaataccaa 300  
gacggaaaat tcagattgga ctctatcata tgtgtcaaat ccaagcttaa acaatttgac 360  
agtgtggttc atctgatcga ctactatggt cagatgtgca aggataagcg gacaggtcca 420  
gaagccccc ggaacggcac tgttcacctt tatctgacca aaccgctcta cacgtcagca 480  
ccatctctgc agcatctctg taggctcacc attaaciaa gtaccggtgc catctgggga 540  
ctgcctttac caacaagact aaaagattac ttggaagaat ataaattcca ggta 594



<210> 26  
 <211> 198  
 <212> PRT  
 <213> Homo sapiens

<400> 26  
 Met Thr Leu Arg Cys Leu Glu Pro Ser Gly Asn Gly Gly Glu Gly Thr  
 1 5 10 15

Arg Ser Gln Trp Gly Thr Ala Gly Ser Ala Glu Glu Pro Ser Pro Gln  
 20 25 30

Ala Ala Arg Leu Ala Lys Ala Leu Arg Glu Leu Gly Gln Thr Gly Trp  
 35 40 45

Tyr Trp Gly Ser Met Thr Val Asn Glu Ala Lys Glu Lys Leu Lys Glu  
 50 55 60

Ala Pro Glu Gly Thr Phe Leu Ile Arg Asp Ser Ser His Ser Asp Tyr  
 65 70 75 80

Leu Leu Thr Ile Ser Val Lys Thr Ser Ala Gly Pro Thr Asn Leu Arg  
 85 90 95

Ile Glu Tyr Gln Asp Gly Lys Phe Arg Leu Asp Ser Ile Ile Cys Val  
 100 105 110

Lys Ser Lys Leu Lys Gln Phe Asp Ser Val Val His Leu Ile Asp Tyr  
 115 120 125

Tyr Val Gln Met Cys Lys Asp Lys Arg Thr Gly Pro Glu Ala Pro Arg  
 130 135 140

Asn Gly Thr Val His Leu Tyr Leu Thr Lys Pro Leu Tyr Thr Ser Ala  
 145 150 155 160

Pro Ser Leu Gln His Leu Cys Arg Leu Thr Ile Asn Lys Cys Thr Gly  
 165 170 175

Ala Ile Trp Gly Leu Pro Leu Pro Thr Arg Leu Lys Asp Tyr Leu Glu  
 180 185 190

Glu Tyr Lys Phe Gln Val  
 195

<210> 27  
 <211> 675  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 atggtcaccc acagcaagtt tcccgccgcc gggatgagcc gccccctgga caccagcctg 60  
 cgccctcaaga ccttcagctc caagagcgag taccagctgg tggatgaacgc agtgcgcaag 120  
 ctgcaggaga gcggcttcta ctggagcgca gtgaccggcg gcgaggcgaa cctgctgctc 180  
 agtgccgagc ccgcccggcac ctttctgata cgcgacagct cggaccagcg ccacttcttc 240  
 acgctcagcg tcaagaccca gtctgggacc aagaacctgc gcatccagtg tgaggggggc 300  
 agcttctctc tgcagagcga tccccggagc acgcagcccg tgccccgctt cgactgcgtg 360  
 ctcaagctgg tgtaccacta catgccgccc cctggagccc cctccttccc ctgcacacct 420  
 actgaacct cctccgaggt gcccgagcag ccgtctgccc agccactccc tgggagtccc 480  
 ccagaagag cctattacat ctactccggg ggcgagaaga tccccctggt gttgagccgg 540  
 cccctctcct ccaacgtggc cactcttcag catctctgtc ggaagaccgt caacggccac 600  
 ctggactcct atgagaaagt caccagctg ccggggccca ttcgggagtt cctggaccag 660  
 tacgatgccc cgctt 675

<210> 28  
 <211> 225  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
 Met Val Thr His Ser Lys Phe Pro Ala Ala Gly Met Ser Arg Pro Leu  
 1 5 10 15  
 Asp Thr Ser Leu Arg Leu Lys Thr Phe Ser Ser Lys Ser Glu Tyr Gln  
 20 25 30  
 Leu Val Val Asn Ala Val Arg Lys Leu Gln Glu Ser Gly Phe Tyr Trp  
 35 40 45  
 Ser Ala Val Thr Gly Gly Glu Ala Asn Leu Leu Leu Ser Ala Glu Pro  
 50 55 60  
 Ala Gly Thr Phe Leu Ile Arg Asp Ser Ser Asp Gln Arg His Phe Phe  
 65 70 75 80

Thr Leu Ser Val Lys Thr Gln Ser Gly Thr Lys Asn Leu Arg Ile Gln  
85 90 95

Cys Glu Gly Gly Ser Phe Ser Leu Gln Ser Asp Pro Arg Ser Thr Gln  
100 105 110

Pro Val Pro Arg Phe Asp Cys Val Leu Lys Leu Val Tyr His Tyr Met  
115 120 125

Pro Pro Pro Gly Ala Pro Ser Phe Pro Ser Pro Pro Thr Glu Pro Ser  
130 135 140

Ser Glu Val Pro Glu Gln Pro Ser Ala Gln Pro Leu Pro Gly Ser Pro  
145 150 155 160

Pro Arg Arg Ala Tyr Tyr Ile Tyr Ser Gly Gly Glu Lys Ile Pro Leu  
165 170 175

Val Leu Ser Arg Pro Leu Ser Ser Asn Val Ala Thr Leu Gln His Leu  
180 185 190

Cys Arg Lys Thr Val Asn Gly His Leu Asp Ser Tyr Glu Lys Val Thr  
195 200 205

Gln Leu Pro Gly Pro Ile Arg Glu Phe Leu Asp Gln Tyr Asp Ala Pro  
210 215 220

Leu  
225

<210> 29

<211> 1524

<212> DNA

<213> Homo sapiens

<400> 29

atgaactgcc agcagctgtg gctgggcttc ctactcccca tgacagtctc aggccggggtc 60

ctggggcttg cagaggtggc gcccggtggac tacctgtcac aatatgggta cctacagaag 120

cctctagaag gatctaataa cttcaagcca gaagatatca ccgaggctct gagagctttt 180

caggaagcat ctgaacttcc agtctcaggt cagctggatg atgccacaag ggcccgcgatg 240

aggcagcctc gttgtggcct agaggatccc ttcaaccaga agacccttaa atacctgttg 300

ctggggccgct ggagaaagaa gcacctgact ttccgcatct tgaacctgcc ctccaccctt 360

```

ccaccccaca cagcccgggc agccctgcgt caagccttcc aggactggag caatgtggct      420
cccttgacct tccaagaggt gcaggctggg gcggttgaca tccgcctctc ctcccatggc      480
cgccaaagct cgtactgttc caatactttt gatgggcctg ggagagtcct ggcccatgcc      540
gacatcccag agctgggcag tgtgcacttc gacgaagacg agttctggac tgagggggacc      600
taccgtgggg tgaacctgcg catcattgca gcccatgaag tgggccatgc tctggggctt      660
gggcactccc gatattccca ggccctcatg gcccagctct acgagggcta ccggccccac      720
tttaagctgc acccagatga tgtggcaggg atccaggctc tctatggcaa gaagagtcca      780
gtgataaggg atgaggaaga agaagagaca gagctgcccc ctgtgcccc agtgcccaca      840
gaaccacagtc ccatgccaga cccttgacgt agtgaactgg atgcatgat gctggggccc      900
cgtgggaaga cctatgcttt caagggggac tatgtgtgga ctgtatcaga ttcaggaccg      960
ggcccccttgt tccgagtgtc tgccctttgg gaggggctcc ccggaaacct ggatgctgct     1020
gtctactcgc ctccaacaca atggattcac ttctttaagg gagacaaggt gtggcgctac     1080
attaatttca agatgtctcc tggcttcccc aagaagctga atagggtaga acctaacctg     1140
gatgcagctc tctattggcc tctcaaccaa aagggtgttc tctttaaggg ctccgggtac     1200
tggcagtggg acgagctagc ccgaactgac ttcagcagct accccaaacc aatcaagggt     1260
ttgtttacgg gagtgcctaaa ccagccctcg gctgctatga gttggcaaga tggccgagtc     1320
tacttttcca agggtcaaagt ctactggcgc ctcaaccagc agcttcgagt agagaaaggc     1380
tatcccagaa atatttccca caactggatg cactgtcgtc cccggactat agacactacc     1440
ccatcaggtg ggaataccac tccctcaggt acgggcataa ccttgatac cactctctca     1500
gccacagaaa ccacgtttga atac                                             1524

```

<210> 30

<211> 508

<212> PRT

<213> Homo sapiens

<400> 30

```

Met Asn Cys Gln Gln Leu Trp Leu Gly Phe Leu Leu Pro Met Thr Val
1              5              10              15

```

```

Ser Gly Arg Val Leu Gly Leu Ala Glu Val Ala Pro Val Asp Tyr Leu
                20              25              30

```

```

Ser Gln Tyr Gly Tyr Leu Gln Lys Pro Leu Glu Gly Ser Asn Asn Phe
35              40              45

```

Lys Pro Glu Asp Ile Thr Glu Ala Leu Arg Ala Phe Gln Glu Ala Ser  
 50 55 60

Glu Leu Pro Val Ser Gly Gln Leu Asp Asp Ala Thr Arg Ala Arg Met  
 65 70 75 80

Arg Gln Pro Arg Cys Gly Leu Glu Asp Pro Phe Asn Gln Lys Thr Leu  
 85 90 95

Lys Tyr Leu Leu Leu Gly Arg Trp Arg Lys Lys His Leu Thr Phe Arg  
 100 105 110

Ile Leu Asn Leu Pro Ser Thr Leu Pro Pro His Thr Ala Arg Ala Ala  
 115 120 125

Leu Arg Gln Ala Phe Gln Asp Trp Ser Asn Val Ala Pro Leu Thr Phe  
 130 135 140

Gln Glu Val Gln Ala Gly Ala Ala Asp Ile Arg Leu Ser Phe His Gly  
 145 150 155 160

Arg Gln Ser Ser Tyr Cys Ser Asn Thr Phe Asp Gly Pro Gly Arg Val  
 165 170 175

Leu Ala His Ala Asp Ile Pro Glu Leu Gly Ser Val His Phe Asp Glu  
 180 185 190

Asp Glu Phe Trp Thr Glu Gly Thr Tyr Arg Gly Val Asn Leu Arg Ile  
 195 200 205

Ile Ala Ala His Glu Val Gly His Ala Leu Gly Leu Gly His Ser Arg  
 210 215 220

Tyr Ser Gln Ala Leu Met Ala Pro Val Tyr Glu Gly Tyr Arg Pro His  
 225 230 235 240

Phe Lys Leu His Pro Asp Asp Val Ala Gly Ile Gln Ala Leu Tyr Gly  
 245 250 255

Lys Lys Ser Pro Val Ile Arg Asp Glu Glu Glu Glu Glu Thr Glu Leu  
 260 265 270

Pro Thr Val Pro Pro Val Pro Thr Glu Pro Ser Pro Met Pro Asp Pro  
 275 280 285

Cys Ser Ser Glu Leu Asp Ala Met Met Leu Gly Pro Arg Gly Lys Thr  
 290 295 300

Tyr Ala Phe Lys Gly Asp Tyr Val Trp Thr Val Ser Asp Ser Gly Pro  
 305 310 315 320

Gly Pro Leu Phe Arg Val Ser Ala Leu Trp Glu Gly Leu Pro Gly Asn  
 325 330 335

Leu Asp Ala Ala Val Tyr Ser Pro Arg Thr Gln Trp Ile His Phe Phe  
 340 345 350

Lys Gly Asp Lys Val Trp Arg Tyr Ile Asn Phe Lys Met Ser Pro Gly  
 355 360 365

Phe Pro Lys Lys Leu Asn Arg Val Glu Pro Asn Leu Asp Ala Ala Leu  
 370 375 380

Tyr Trp Pro Leu Asn Gln Lys Val Phe Leu Phe Lys Gly Ser Gly Tyr  
 385 390 395 400

Trp Gln Trp Asp Glu Leu Ala Arg Thr Asp Phe Ser Ser Tyr Pro Lys  
 405 410 415

Pro Ile Lys Gly Leu Phe Thr Gly Val Pro Asn Gln Pro Ser Ala Ala  
 420 425 430

Met Ser Trp Gln Asp Gly Arg Val Tyr Phe Phe Lys Gly Lys Val Tyr  
 435 440 445

Trp Arg Leu Asn Gln Gln Leu Arg Val Glu Lys Gly Tyr Pro Arg Asn  
 450 455 460

Ile Ser His Asn Trp Met His Cys Arg Pro Arg Thr Ile Asp Thr Thr  
 465 470 475 480

Pro Ser Gly Gly Asn Thr Thr Pro Ser Gly Thr Gly Ile Thr Leu Asp  
 485 490 495

Thr Thr Leu Ser Ala Thr Glu Thr Thr Phe Glu Tyr  
 500 505

<210> 31  
 <211> 942  
 <212> DNA  
 <213> Homo sapiens

<400> 31  
 atggggctgg aggcggcgcg cgagctggag tgcgcggcgc tgggcacgct gctgcgggat 60  
 ccgcgggagg cggaacgcac gctgctgctg gactgccgcc ccttcctggc cttctgccgg 120  
 cgccacgtgc gcgccgcgcg gccagtgcct tggaaacgcgc tgctgcggcg ccgcgcgcgc 180  
 ggccctcctg ccgccgttct cgctgcctg ctgcccgacc gcgcgctgcg gacgcgcctg 240  
 gtccgcgggg agctggcgcg ggccgtggtg ctggacgagg gcagtgcctc ggtggcggag 300  
 ctccggcccc acagcccggc tcatgtgctg ctggccgcgc tgctgcacga gaccgcgcgc 360  
 gggcccactg ccgtgtactt cctgcgagga ggcttcgacg gcttcaggga ctgctgtccc 420  
 gatctgtgct ctgaggcccc cgccctgcg ctgccgcca caggggacaa aaccagccgc 480  
 tccgactcca gggctcctgt ctacgaccag ggtggccctg tggagatctt gccctacctg 540  
 ttcttgggca gctgcagtca ctcgtcagac ctgcaggggc tgcaggcctg tggcatcaca 600  
 gccgtcctca acgtgtccgc cagctgcccc aaccactttg agggcctttt ccgctacaag 660  
 agtatccctg tggaggacaa ccagatggtg gagatcagtg cctggttcca ggaggccata 720  
 ggcttcattg actgggtgaa gaacagcgga ggccgggtgc tgggtgactg ccaggcgggt 780  
 atctgcgct ctgccaccat ctgtctggca tacctcatgc agagtcgccg tgtgcggctg 840  
 gacgaggcct ttgacttcgt taagcagcgc cgggggggtca tctcccccaa cttcagtttc 900  
 atggggcagc tgctgcagtt tgagaccag gtgctgtgtc ac 942

<210> 32  
 <211> 314  
 <212> PRT  
 <213> Homo sapiens

<400> 32  
 Met Gly Leu Glu Ala Ala Arg Glu Leu Glu Cys Ala Ala Leu Gly Thr  
 1 5 10 15  
 Leu Leu Arg Asp Pro Arg Glu Ala Glu Arg Thr Leu Leu Leu Asp Cys  
 20 25 30  
 Arg Pro Phe Leu Ala Phe Cys Arg Arg His Val Arg Ala Ala Arg Pro  
 35 40 45

Val Pro Trp Asn Ala Leu Leu Arg Arg Arg Ala Arg Gly Pro Pro Ala  
50 55 60

Ala Val Leu Ala Cys Leu Leu Pro Asp Arg Ala Leu Arg Thr Arg Leu  
65 70 75 80

Val Arg Gly Glu Leu Ala Arg Ala Val Val Leu Asp Glu Gly Ser Ala  
85 90 95

Ser Val Ala Glu Leu Arg Pro Asp Ser Pro Ala His Val Leu Leu Ala  
100 105 110

Ala Leu Leu His Glu Thr Arg Ala Gly Pro Thr Ala Val Tyr Phe Leu  
115 120 125

Arg Gly Gly Phe Asp Gly Phe Gln Gly Cys Cys Pro Asp Leu Cys Ser  
130 135 140

Glu Ala Pro Ala Pro Ala Leu Pro Pro Thr Gly Asp Lys Thr Ser Arg  
145 150 155 160

Ser Asp Ser Arg Ala Pro Val Tyr Asp Gln Gly Gly Pro Val Glu Ile  
165 170 175

Leu Pro Tyr Leu Phe Leu Gly Ser Cys Ser His Ser Ser Asp Leu Gln  
180 185 190

Gly Leu Gln Ala Cys Gly Ile Thr Ala Val Leu Asn Val Ser Ala Ser  
195 200 205

Cys Pro Asn His Phe Glu Gly Leu Phe Arg Tyr Lys Ser Ile Pro Val  
210 215 220

Glu Asp Asn Gln Met Val Glu Ile Ser Ala Trp Phe Gln Glu Ala Ile  
225 230 235 240

Gly Phe Ile Asp Trp Val Lys Asn Ser Gly Gly Arg Val Leu Val His  
245 250 255

Cys Gln Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu  
260 265 270



Met Gln Ser Arg Arg Val Arg Leu Asp Glu Ala Phe Asp Phe Val Lys  
 275 280 285

Gln Arg Arg Gly Val Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu  
 290 295 300

Leu Gln Phe Glu Thr Gln Val Leu Cys His  
 305 310

<210> 33  
 <211> 1152  
 <212> DNA  
 <213> Homo sapiens

<400> 33  
 atgaaggtca cgctcgctcga cgggcgccag ctgcgcaaga tgctccgcaa ggaggcggcg 60  
 gcgcgctgcg tgggtgctcga ctgccggccc tatctggcct tcgctgcctc gaacgtgcgc 120  
 ggctcgctca acgtcaacct caactcgggtg gtgctgcggc gggccccgggg cggcgcgggtg 180  
 tcggcgcgct acgtgctgcc cgacgaggcg gcgcgcgcgc ggctcctgca ggaggggcggc 240  
 ggcggcgctcg cggccgtggt ggtgctggac cagggcagcc gccactggca gaagctgcga 300  
 gaggagagcg ccgcgcgtgt cgtcctcacc tcgctactcg cttgcctacc cgccggccccg 360  
 cgggtctact tcctcaaagg gggatatgag acttttctact cggaatatcc tgagtgttgc 420  
 gtggatgtaa aaccattttc acaagagaag attgagagtg agagagccct catcagccag 480  
 tgtggaaaac cagtggtaaa tgtcagctac aggccagctt atgaccaggg tggcccagtt 540  
 gaaatccttc ccttcctcta ccttggaagt gcctaccatg catccaagtg cgagttcctc 600  
 gccaaacttgc acatcacagc cctgctgaat gtctcccgac ggacctccga ggcttgcag 660  
 acccacctac actacaaatg gatccctgtg gaagacagcc acacgggtga cattagctcc 720  
 cactttcaag aagcaataga cttcattgac tgtgtcaggg aaaaggagg caaggtcctg 780  
 gtccactgtg aggctgggat ctcccgttca cccaccatct gcatggctta cttatgaag 840  
 accaagcagt tccgcctgaa ggaggccttc gattacatca agcagaggag gagcatggtc 900  
 tcgcccact ttggcttcat gggccagctc ctgcagtacg aatctgagat cctgccctcc 960  
 acgcccaccc ccagcctcc ctctgcaa ggggaggcag caggctcttc actgataggc 1020  
 catttgcaga cactgagccc tgacatgcag ggtgcctact gcacattccc tgctcgggtg 1080  
 ctggcaccgg tgcctaccca ctcaacagtc tcagagctca gcagaagccc tgtggcaacg 1140  
 gccacatcct gc 1152

<210> 34  
 <211> 384  
 <212> PRT  
 <213> Homo sapiens

<400> 34  
 Met Lys Val Thr Ser Leu Asp Gly Arg Gln Leu Arg Lys Met Leu Arg  
 1 5 10 15  
 Lys Glu Ala Ala Ala Arg Cys Val Val Leu Asp Cys Arg Pro Tyr Leu  
 20 25 30  
 Ala Phe Ala Ala Ser Asn Val Arg Gly Ser Leu Asn Val Asn Leu Asn  
 35 40 45  
 Ser Val Val Leu Arg Arg Ala Arg Gly Gly Ala Val Ser Ala Arg Tyr  
 50 55 60  
 Val Leu Pro Asp Glu Ala Ala Arg Ala Arg Leu Leu Gln Glu Gly Gly  
 65 70 75 80  
 Gly Gly Val Ala Ala Val Val Val Leu Asp Gln Gly Ser Arg His Trp  
 85 90 95  
 Gln Lys Leu Arg Glu Glu Ser Ala Ala Arg Val Val Leu Thr Ser Leu  
 100 105 110  
 Leu Ala Cys Leu Pro Ala Gly Pro Arg Val Tyr Phe Leu Lys Gly Gly  
 115 120 125  
 Tyr Glu Thr Phe Tyr Ser Glu Tyr Pro Glu Cys Cys Val Asp Val Lys  
 130 135 140  
 Pro Ile Ser Gln Glu Lys Ile Glu Ser Glu Arg Ala Leu Ile Ser Gln  
 145 150 155 160  
 Cys Gly Lys Pro Val Val Asn Val Ser Tyr Arg Pro Ala Tyr Asp Gln  
 165 170 175  
 Gly Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly Ser Ala Tyr  
 180 185 190  
 His Ala Ser Lys Cys Glu Phe Leu Ala Asn Leu His Ile Thr Ala Leu  
 195 200 205

Leu Asn Val Ser Arg Arg Thr Ser Glu Ala Cys Met Thr His Leu His  
210 215 220

Tyr Lys Trp Ile Pro Val Glu Asp Ser His Thr Ala Asp Ile Ser Ser  
225 230 235 240

His Phe Gln Glu Ala Ile Asp Phe Ile Asp Cys Val Arg Glu Lys Gly  
245 250 255

Gly Lys Val Leu Val His Cys Glu Ala Gly Ile Ser Arg Ser Pro Thr  
260 265 270

Ile Cys Met Ala Tyr Leu Met Lys Thr Lys Gln Phe Arg Leu Lys Glu  
275 280 285

Ala Phe Asp Tyr Ile Lys Gln Arg Arg Ser Met Val Ser Pro Asn Phe  
290 295 300

Gly Phe Met Gly Gln Leu Leu Gln Tyr Glu Ser Glu Ile Leu Pro Ser  
305 310 315 320

Thr Pro Asn Pro Gln Pro Pro Ser Cys Gln Gly Glu Ala Ala Gly Ser  
325 330 335

Ser Leu Ile Gly His Leu Gln Thr Leu Ser Pro Asp Met Gln Gly Ala  
340 345 350

Tyr Cys Thr Phe Pro Ala Ser Val Leu Ala Pro Val Pro Thr His Ser  
355 360 365

Thr Val Ser Glu Leu Ser Arg Ser Pro Val Ala Thr Ala Thr Ser Cys  
370 375 380

<210> 35  
<211> 741  
<212> DNA  
<213> Homo sapiens

<400> 35  
atgtccaaa actcagcagt gcttctggtg ctggtgatca gtgcttctgc aacccatgag 60  
gcggagcaga atgactctgt gagccccagg aaatcccagag tggcggccca aaactcagct 120  
gaagtgggttc gttgcctcaa cagtgtctta caggtcggct gcggggcttt tgcattgctg 180  
gaaaactcca cctgtgacac agatgggatg tatgacatct gtaaatcctt cttgtacagc 240

```

gctgctaaat ttgacactca gggaaaagca ttcgtcaaag agagcttaaa atgcatcgcc      300
aacgggggtca cctccaaggt cttcctcgcc attcggaggt gctccacttt ccaaaggatg      360
attgctgagg tgcaggaaga gtgctacagc aagctgaatg tgtgcagcat cgccaagcgg      420
aacctgaag ccatcactga ggtcgtccag ctgcccaatc acttctccaa cagatactat      480
aacagacttg tccgaagcct gctggaatgt gatgaagaca cagtcagcac aatcagagac      540
agcctgatgg agaaaattgg gcctaacatg gccagcctct tccacatcct gcagacagac      600
cactgtgccc aaacacacccc acgagctgac ttcaacagga gacgcaccaa tgagccgcag      660
aagctgaaag tcctcctcag gaacctccga ggtgaggagg actctccctc ccacatcaaa      720
cgcacatccc atgagagtgc a                                              741

```

&lt;210&gt; 36

&lt;211&gt; 247

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 36

```

Met Leu Gln Asn Ser Ala Val Leu Leu Val Leu Val Ile Ser Ala Ser
1              5              10              15

```

```

Ala Thr His Glu Ala Glu Gln Asn Asp Ser Val Ser Pro Arg Lys Ser
              20              25              30

```

```

Arg Val Ala Ala Gln Asn Ser Ala Glu Val Val Arg Cys Leu Asn Ser
          35              40              45

```

```

Ala Leu Gln Val Gly Cys Gly Ala Phe Ala Cys Leu Glu Asn Ser Thr
          50              55              60

```

```

Cys Asp Thr Asp Gly Met Tyr Asp Ile Cys Lys Ser Phe Leu Tyr Ser
65              70              75              80

```

```

Ala Ala Lys Phe Asp Thr Gln Gly Lys Ala Phe Val Lys Glu Ser Leu
              85              90              95

```

```

Lys Cys Ile Ala Asn Gly Val Thr Ser Lys Val Phe Leu Ala Ile Arg
          100              105              110

```

```

Arg Cys Ser Thr Phe Gln Arg Met Ile Ala Glu Val Gln Glu Glu Cys
          115              120              125

```

Tyr Ser Lys Leu Asn Val Cys Ser Ile Ala Lys Arg Asn Pro Glu Ala  
 130 135 140

Ile Thr Glu Val Val Gln Leu Pro Asn His Phe Ser Asn Arg Tyr Tyr  
 145 150 155 160

Asn Arg Leu Val Arg Ser Leu Leu Glu Cys Asp Glu Asp Thr Val Ser  
 165 170 175

Thr Ile Arg Asp Ser Leu Met Glu Lys Ile Gly Pro Asn Met Ala Ser  
 180 185 190

Leu Phe His Ile Leu Gln Thr Asp His Cys Ala Gln Thr His Pro Arg  
 195 200 205

Ala Asp Phe Asn Arg Arg Arg Thr Asn Glu Pro Gln Lys Leu Lys Val  
 210 215 220

Leu Leu Arg Asn Leu Arg Gly Glu Glu Asp Ser Pro Ser His Ile Lys  
 225 230 235 240

Arg Thr Ser His Glu Ser Ala  
 245

<210> 37  
 <211> 2580  
 <212> DNA  
 <213> Homo sapiens

<400> 37  
 atggggccct ggggctggaa attgcgctgg accgtcgcct tgctcctcgc cgcggcgggg 60  
 actgcagtgg gcgacagatg tgaaagaaac gagttccagt gccaagacgg gaaatgcatc 120  
 tctacaagt gggctctgca tggcagcgct gagtgccagg atggctctga tgagtccag 180  
 gagacgtgct tgtctgtcac ctgcaaatacc ggggacttca gctgtggggg ccgtgtcaac 240  
 cgctgcattc ctcagttctg gaggtgcatg ggccaagtgg actgcgacaa cggctcagac 300  
 gagcaaggct gtcccccaa gacgtgctcc caggacgagt ttcgctgcca cgatgggaag 360  
 tgcatctctc ggcagttcgt ctgtgactca gaccgggact gcttgacgg ctcagacgag 420  
 gctcctgcc cggtgctcac ctgtggtccc gccagcttcc agtgcaacag ctccacctgc 480  
 atccccagc tgtgggcctg cgacaacgac cccgactgag aagatggctc ggatgagtg 540  
 ccgcagcgct gtaggggtct ttacgtgttc caaggggaca gtagccctg ctcggccttc 600

gagttccact	gcctaagtgg	cgagtgcac	cactccagct	ggcgctgtga	tggaggcccc	660
gactgcaagg	acaaatctga	cgaggaaaac	tgcgctgtgg	ccacctgtcg	ccctgacgaa	720
ttccagtgtc	ctgatggaaa	ctgcatccat	ggcagccggc	agtgtgaccg	ggaatatgac	780
tgcaaggaca	tgagcgatga	agttggctgc	gttaatgtga	cactctgcga	gggacccaac	840
aagttcaagt	gtcacagcgg	cgaatgcac	accctggaca	aagtctgcaa	catggctaga	900
gactgccggg	actggtcaga	tgaacccac	aaagagtgcg	ggaccaacga	atgcttggac	960
aacaacggcg	gctgttccca	cgtctgcaat	gaccttaaga	tcggctacga	gtgcctgtgc	1020
cccagcggct	tccagctggg	ggcccagcga	agatgcgaag	atatcgatga	gtgtcaggat	1080
cccagacacct	gcagccagct	ctgcgtgaac	ctggagggtg	gctacaagtg	ccagtgtgag	1140
gaaggcttcc	agctggaccc	ccacacgaag	gcctgcaagg	ctgtgggctc	catcgcctac	1200
ctcttcttca	ccaaccggca	cgaggtcagg	aagatgacgc	tggaccggag	cgagtacacc	1260
agcctcatcc	ccaacctgag	gaacgtggtc	gctctggaca	cggaggtggc	cagcaataga	1320
atctactggg	ctgacctgtc	ccagagaatg	atctgcagca	cccagcttga	cagagccac	1380
ggcgtctctt	cctatgacac	cgtcatcagc	agggacatcc	aggccccga	cgggctggct	1440
gtggactgga	tccacagcaa	catctactgg	accgactctg	tcctgggcac	tgtctctgtt	1500
gcggatacca	agggcgtgaa	gaggaaaacg	ttattcaggg	agaacggctc	caagccaagg	1560
gccatcgtgg	tggatcctgt	tcatggcttc	atgtactgga	ctgactgggg	aactccgcgc	1620
aagatcaaga	aagggggcct	gaatgggtgtg	gacatctact	cgtggtgac	tgaaaacatt	1680
cagtggccca	atggcatcac	cctagatctc	ctcagtggcc	gcctctactg	ggttgactcc	1740
aaacttcact	ccatctcaag	catcgatgtc	aatgggggca	accggaagac	catcttggag	1800
gatgaaaaga	ggctggccca	ccccttctcc	ttggcgtct	ttgaggacaa	agtattttgg	1860
acagatatca	tcaacgaagc	cattttcagt	gccaaccgcc	tcacaggttc	cgatgtcaac	1920
ttgttggctg	aaaacctact	gtccccagag	gatatgggtc	tcttccacaa	cctcaccag	1980
ccaagaggag	tgaactggtg	tgagaggacc	accctgagca	atggcggctg	ccagtatctg	2040
tgctccctg	ccccgcagat	caacccccac	tcgcccaggt	ttacctgcgc	ctgcccggac	2100
ggcatgctgc	tggccaggga	catgaggagc	tgctcacag	aggctgaggc	tgcaagtggc	2160
accagggaga	catccaccgt	caggctaaag	gtcagctcca	cagccgtaag	gacacagcac	2220
acaaccaccc	ggcctgttcc	cgacacctcc	cggctgcctg	gggccacccc	tgggctcacc	2280
acggtggaga	tagtgacaat	gtctcaccaa	gctctgggcg	acgttgctgg	cagaggaaat	2340

gagaagaagc ccagtagcgt gagggctctg tccattgtcc tcccatcgt gctcctcgtc 2400  
 ttccctttgcc tgggggtctt ccttctatgg aagaactggc ggcttaagaa catcaacagc 2460  
 atcaactttg acaaccccgt ctatcagaag accacagagg atgaggtcca catttgccac 2520  
 aaccaggacg gctacagcta cccctcgaga cagatgggtca gtctggagga tgacgtggcg 2580

<210> 38  
 <211> 860  
 <212> PRT  
 <213> Homo sapiens

<400> 38  
 Met Gly Pro Trp Gly Trp Lys Leu Arg Trp Thr Val Ala Leu Leu Leu  
 1 5 10 15

Ala Ala Ala Gly Thr Ala Val Gly Asp Arg Cys Glu Arg Asn Glu Phe  
 20 25 30

Gln Cys Gln Asp Gly Lys Cys Ile Ser Tyr Lys Trp Val Cys Asp Gly  
 35 40 45

Ser Ala Glu Cys Gln Asp Gly Ser Asp Glu Ser Gln Glu Thr Cys Leu  
 50 55 60

Ser Val Thr Cys Lys Ser Gly Asp Phe Ser Cys Gly Gly Arg Val Asn  
 65 70 75 80

Arg Cys Ile Pro Gln Phe Trp Arg Cys Asp Gly Gln Val Asp Cys Asp  
 85 90 95

Asn Gly Ser Asp Glu Gln Gly Cys Pro Pro Lys Thr Cys Ser Gln Asp  
 100 105 110

Glu Phe Arg Cys His Asp Gly Lys Cys Ile Ser Arg Gln Phe Val Cys  
 115 120 125

Asp Ser Asp Arg Asp Cys Leu Asp Gly Ser Asp Glu Ala Ser Cys Pro  
 130 135 140

Val Leu Thr Cys Gly Pro Ala Ser Phe Gln Cys Asn Ser Ser Thr Cys  
 145 150 155 160

Ile Pro Gln Leu Trp Ala Cys Asp Asn Asp Pro Asp Cys Glu Asp Gly  
 165 170 175

Ser Asp Glu Trp Pro Gln Arg Cys Arg Gly Leu Tyr Val Phe Gln Gly  
180 185 190

Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser Gly Glu  
195 200 205

Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys Lys Asp  
210 215 220

Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro Asp Glu  
225 230 235 240

Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln Cys Asp  
245 250 255

Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys Val Asn  
260 265 270

Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser Gly Glu  
275 280 285

Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys Arg Asp  
290 295 300

Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys Leu Asp  
305 310 315 320

Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile Gly Tyr  
325 330 335

Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg Arg Cys  
340 345 350

Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln Leu Cys  
355 360 365

Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly Phe Gln  
370 375 380

Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile Ala Tyr  
385 390 395 400



Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu Asp Arg  
 405 410 415

Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val Ala Leu  
 420 425 430

Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu Ser Gln  
 435 440 445

Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val Ser Ser  
 450 455 460

Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly Leu Ala  
 465 470 475 480

Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val Leu Gly  
 485 490 495

Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr Leu Phe  
 500 505 510

Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro Val His  
 515 520 525

Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile Lys Lys  
 530 535 540

Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu Asn Ile  
 545 550 555 560

Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg Leu Tyr  
 565 570 575

Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val Asn Gly  
 580 585 590

Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala His Pro  
 595 600 605

Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp Ile Ile  
 610 615 620

Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp Val Asn  
 625 630 635 640

Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu Phe His  
645 650 655

Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr Thr Leu  
660 665 670

Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln Ile Asn  
675 680 685

Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met Leu Leu  
690 695 700

Ala Arg Asp Met Arg Ser Cys Leu Thr Glu Ala Glu Ala Ala Val Ala  
705 710 715 720

Thr Gln Glu Thr Ser Thr Val Arg Leu Lys Val Ser Ser Thr Ala Val  
725 730 735

Arg Thr Gln His Thr Thr Thr Arg Pro Val Pro Asp Thr Ser Arg Leu  
740 745 750

Pro Gly Ala Thr Pro Gly Leu Thr Thr Val Glu Ile Val Thr Met Ser  
755 760 765

His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys Lys Pro  
770 775 780

Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu Leu Val  
785 790 795 800

Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg Leu Lys  
805 810 815

Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys Thr Thr  
820 825 830

Glu Asp Glu Val His Ile Cys His Asn Gln Asp Gly Tyr Ser Tyr Pro  
835 840 845

Ser Arg Gln Met Val Ser Leu Glu Asp Asp Val Ala  
850 855 860

<210> 39  
 <211> 1320  
 <212> DNA  
 <213> Homo sapiens

<400> 39  
 atggaacaac ggggacagaa cgccccggcc gcttcggggg cccggaaaag gcacggccca 60  
 ggacccaggg aggcgcgggg agccaggcct gggtccggg tccccaagac ctttgtgctc 120  
 gttgtcgccg cggtcctgct gttggtctca gctgagtctg ctctgatcac ccaacaagac 180  
 ctagctcccc agcagagagt ggccccacaa caaaagaggt ccagcccctc agagggattg 240  
 tgtccacctg gacaccatat ctcagaagac ggtagagatt gcatctcctg caaatatgga 300  
 caggactata gcactcactg gaatgacctc cttttctgct tgcgctgcac caggtgtgat 360  
 tcaggtgaag tggagctaag tccctgcacc acgaccagaa acacagtgtg tcagtgcgaa 420  
 gaaggcacct tccgggaaga agattctcct gagatgtgcc ggaagtgccg cacaggggtg 480  
 ccagagggga tggtaaggt cggtgattgt acaccctgga gtgacatcga atgtgtccac 540  
 aaagaatcag gtacaaagca cagtggggaa gccccagctg tggaggagac ggtgacctcc 600  
 agcccagggga ctctgcctc tccctgttct ctctcaggca tcatcatagg agtcacagtt 660  
 gcagccgtag tcttgattgt ggctgtgttt gtttgcaagt ctttactgtg gaagaaagtc 720  
 cttccttacc tgaaaggcat ctgctcaggt ggtggtggg accctgagcg tgtggacaga 780  
 agctcacaac gacctggggc tgaggacaat gtcctcaatg agatcgtgag tatcttgacg 840  
 cccaccaggg tccctgagca ggaaatggaa gtccaggagc cagcagagcc aacaggtgtc 900  
 aacatgttgt cccccgggga gtcagagcat ctgctggaac cggcagaagc tgaaaggtct 960  
 cagaggagga ggctgctggg tccagcaaata gaaggtgatc cactgagac tctgagacag 1020  
 tgcttcgatg actttgcaga cttggtgcc tttgactcct gggagccgct catgaggaag 1080  
 ttgggcctca tggacaatga gataaaggtg gctaaagctg aggcagcggg ccacagggac 1140  
 accttgatca cgatgctgat aaagtgggtc aacaaaaccg ggcgagatgc ctctgtccac 1200  
 accctgctgg atgccttga gacgctggga gagagacttg ccaagcagaa gattgaggac 1260  
 cacttgttga gctctgaaa gttcatgtat ctagaaggta atgcagactc tgccatgtcc 1320

<210> 40  
 <211> 440  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 40

Met Glu Gln Arg Gly Gln Asn Ala Pro Ala Ala Ser Gly Ala Arg Lys  
 1 5 10 15

Arg His Gly Pro Gly Pro Arg Glu Ala Arg Gly Ala Arg Pro Gly Leu  
 20 25 30

Arg Val Pro Lys Thr Leu Val Leu Val Val Ala Ala Val Leu Leu Leu  
 35 40 45

Val Ser Ala Glu Ser Ala Leu Ile Thr Gln Gln Asp Leu Ala Pro Gln  
 50 55 60

Gln Arg Val Ala Pro Gln Gln Lys Arg Ser Ser Pro Ser Glu Gly Leu  
 65 70 75 80

Cys Pro Pro Gly His His Ile Ser Glu Asp Gly Arg Asp Cys Ile Ser  
 85 90 95

Cys Lys Tyr Gly Gln Asp Tyr Ser Thr His Trp Asn Asp Leu Leu Phe  
 100 105 110

Cys Leu Arg Cys Thr Arg Cys Asp Ser Gly Glu Val Glu Leu Ser Pro  
 115 120 125

Cys Thr Thr Thr Arg Asn Thr Val Cys Gln Cys Glu Glu Gly Thr Phe  
 130 135 140

Arg Glu Glu Asp Ser Pro Glu Met Cys Arg Lys Cys Arg Thr Gly Cys  
 145 150 155 160

Pro Arg Gly Met Val Lys Val Gly Asp Cys Thr Pro Trp Ser Asp Ile  
 165 170 175

Glu Cys Val His Lys Glu Ser Gly Thr Lys His Ser Gly Glu Ala Pro  
 180 185 190

Ala Val Glu Glu Thr Val Thr Ser Ser Pro Gly Thr Pro Ala Ser Pro  
 195 200 205

Cys Ser Leu Ser Gly Ile Ile Ile Gly Val Thr Val Ala Ala Val Val  
 210 215 220

Leu Ile Val Ala Val Phe Val Cys Lys Ser Leu Leu Trp Lys Lys Val  
 225 230 235 240

Leu Pro Tyr Leu Lys Gly Ile Cys Ser Gly Gly Gly Gly Asp Pro Glu  
 245 250 255

Arg Val Asp Arg Ser Ser Gln Arg Pro Gly Ala Glu Asp Asn Val Leu  
 260 265 270

Asn Glu Ile Val Ser Ile Leu Gln Pro Thr Gln Val Pro Glu Gln Glu  
 275 280 285

Met Glu Val Gln Glu Pro Ala Glu Pro Thr Gly Val Asn Met Leu Ser  
 290 295 300

Pro Gly Glu Ser Glu His Leu Leu Glu Pro Ala Glu Ala Glu Arg Ser  
 305 310 315 320

Gln Arg Arg Arg Leu Leu Val Pro Ala Asn Glu Gly Asp Pro Thr Glu  
 325 330 335

Thr Leu Arg Gln Cys Phe Asp Asp Phe Ala Asp Leu Val Pro Phe Asp  
 340 345 350

Ser Trp Glu Pro Leu Met Arg Lys Leu Gly Leu Met Asp Asn Glu Ile  
 355 360 365

Lys Val Ala Lys Ala Glu Ala Ala Gly His Arg Asp Thr Leu Tyr Thr  
 370 375 380

Met Leu Ile Lys Trp Val Asn Lys Thr Gly Arg Asp Ala Ser Val His  
 385 390 395 400

Thr Leu Leu Asp Ala Leu Glu Thr Leu Gly Glu Arg Leu Ala Lys Gln  
 405 410 415

Lys Ile Glu Asp His Leu Leu Ser Ser Gly Lys Phe Met Tyr Leu Glu  
 420 425 430

Gly Asn Ala Asp Ser Ala Met Ser  
 435 440

<210> 41  
 <211> 387  
 <212> DNA  
 <213> Homo sapiens

```

<400> 41
atggctcggg gctcgctgcg ccggttgctg cggctcctcg tgctggggct ctggctggcg      60
ttgctgcgct ccgtggccgg ggagcaagcg ccaggcaccg cccctgctc ccgcggcagc      120
tcctggagcg cggacctgga caagtgcctg gactgcgcgt cttgcagggc gcgaccgcac      180
agcgacttct gcctgggctg cgctgcagca cctcctgccc ccttcgggct gctttggccc      240
atccttgggg gcgctctgag cctgaccttc gtgctggggc tgctttcttg ctttttggtc      300
tgagacgat gccgcaggag agagaagttc accaccccca tagaggagac cggcggagag      360
ggctgcccag ctgtggcgct gatccag                                           387

```

<210> 42  
 <211> 129  
 <212> PRT  
 <213> Homo sapiens

```

<400> 42
Met Ala Arg Gly Ser Leu Arg Arg Leu Leu Arg Leu Leu Val Leu Gly
1           5           10           15

Leu Trp Leu Ala Leu Leu Arg Ser Val Ala Gly Glu Gln Ala Pro Gly
          20           25           30

Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys
          35           40           45

Cys Met Asp Cys Ala Ser Cys Arg Ala Arg Pro His Ser Asp Phe Cys
          50           55           60

Leu Gly Cys Ala Ala Ala Pro Pro Ala Pro Phe Arg Leu Leu Trp Pro
65           70           75           80

Ile Leu Gly Gly Ala Leu Ser Leu Thr Phe Val Leu Gly Leu Leu Ser
          85           90           95

Gly Phe Leu Val Trp Arg Arg Cys Arg Arg Arg Glu Lys Phe Thr Thr
          100          105          110

Pro Ile Glu Glu Thr Gly Gly Glu Gly Cys Pro Ala Val Ala Leu Ile
          115          120          125

```

Gln

&lt;210&gt; 43

&lt;211&gt; 1401

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 43

atggagtaca tgagcactgg aagtgacaat aaagaagaga ttgatttatt aattaaacat	60
ttaaatgtgt ctgatgtaat agacattatg gaaaatcttt atgcaagtga agagccagca	120
gtttatgaac ccagtctaata gaccatgtgt caagacagta atcaaaacga tgagcgttct	180
aagtctctgc tgcttagtgg ccaagaggta ccatggttgt catcagtcag atatggaact	240
gtggaggatt tgcttgcttt tgcaaaccat atatccaaca ctgcaaagca tttttatgga	300
caacgaccac aggaatctgg aattttatta aacatgggtca tcaactccca aaatggacgt	360
taccaaatag attccgatgt tctcctgac ccttggagc tgacttacag gaatattggt	420
tctgatttta ttcctcgggg cgcctttgga aaggatatac tggcacaaga tataaagacg	480
aagaaaagaa tggcgtgtaa actgatccca gtagatcaat ttaagccatc tgatgtggaa	540
atccaggctt gcttccggca cgagaacatc gcagagctgt atggcgcagt cctgtgggggt	600
gaaactgtcc atctctttat ggaagcaggc gaggggagggt ctgttctgga gaaactggag	660
agctgtggac caatgagaga atttgaaatt atttgggtga caaagcatgt tctcaaggga	720
cttgattttc tacactcaaa gaaagtgatc catcatgata ttaaacctag caacattggt	780
ttcatgtcca caaaagctgt tttggtggat tttggcctaa gtgttcaaata gaccgaagat	840
gtctattttc ctaaggacct ccgaggaaca gagatttaca tgagcccaga ggtcatcctg	900
tgcagggggc attcaaccaa agcagacatc tacagcctgg gggccacgct catccacatg	960
cagacgggca cccaccctg ggtgaagcgc taccctcgtc cagcctatcc ctctacctg	1020
tacataatcc acaagcaagc acctccactg gaagacattg cagatgactg cagtccaggg	1080
atgagagagc tgatagaagc ttccctggag agaaacccca atcaccgccc aagagccgca	1140
gacctactaa aacatgaggc cctgaacccg cccagagagg atcagccacg ctgtcagagt	1200
ctggactctg cctctttgga gcgcaagagg ctgctgagta ggaaggagct ggaacttct	1260
gagaacattg ctgattcttc gtgcacagga agcaccgagg aatctgagat gctcaagagg	1320
caacgctctc tctacatcga cctcggcgct ctggctggct acttcaatct tgttcgggga	1380
ccaccaacgc ttgaatatgg c	1401

<210> 44  
 <211> 467  
 <212> PRT  
 <213> Homo sapiens

<400> 44

Met Glu Tyr Met Ser Thr Gly Ser Asp Asn Lys Glu Glu Ile Asp Leu  
 1 5 10 15

Leu Ile Lys His Leu Asn Val Ser Asp Val Ile Asp Ile Met Glu Asn  
 20 25 30

Leu Tyr Ala Ser Glu Glu Pro Ala Val Tyr Glu Pro Ser Leu Met Thr  
 35 40 45

Met Cys Gln Asp Ser Asn Gln Asn Asp Glu Arg Ser Lys Ser Leu Leu  
 50 55 60

Leu Ser Gly Gln Glu Val Pro Trp Leu Ser Ser Val Arg Tyr Gly Thr  
 65 70 75 80

Val Glu Asp Leu Leu Ala Phe Ala Asn His Ile Ser Asn Thr Ala Lys  
 85 90 95

His Phe Tyr Gly Gln Arg Pro Gln Glu Ser Gly Ile Leu Leu Asn Met  
 100 105 110

Val Ile Thr Pro Gln Asn Gly Arg Tyr Gln Ile Asp Ser Asp Val Leu  
 115 120 125

Leu Ile Pro Trp Lys Leu Thr Tyr Arg Asn Ile Gly Ser Asp Phe Ile  
 130 135 140

Pro Arg Gly Ala Phe Gly Lys Val Tyr Leu Ala Gln Asp Ile Lys Thr  
 145 150 155 160

Lys Lys Arg Met Ala Cys Lys Leu Ile Pro Val Asp Gln Phe Lys Pro  
 165 170 175

Ser Asp Val Glu Ile Gln Ala Cys Phe Arg His Glu Asn Ile Ala Glu  
 180 185 190

Leu Tyr Gly Ala Val Leu Trp Gly Glu Thr Val His Leu Phe Met Glu  
 195 200 205



Ala Gly Glu Gly Gly Ser Val Leu Glu Lys Leu Glu Ser Cys Gly Pro  
 210 215 220

Met Arg Glu Phe Glu Ile Ile Trp Val Thr Lys His Val Leu Lys Gly  
 225 230 235 240

Leu Asp Phe Leu His Ser Lys Lys Val Ile His His Asp Ile Lys Pro  
 245 250 255

Ser Asn Ile Val Phe Met Ser Thr Lys Ala Val Leu Val Asp Phe Gly  
 260 265 270

Leu Ser Val Gln Met Thr Glu Asp Val Tyr Phe Pro Lys Asp Leu Arg  
 275 280 285

Gly Thr Glu Ile Tyr Met Ser Pro Glu Val Ile Leu Cys Arg Gly His  
 290 295 300

Ser Thr Lys Ala Asp Ile Tyr Ser Leu Gly Ala Thr Leu Ile His Met  
 305 310 315 320

Gln Thr Gly Thr Pro Pro Trp Val Lys Arg Tyr Pro Arg Ser Ala Tyr  
 325 330 335

Pro Ser Tyr Leu Tyr Ile Ile His Lys Gln Ala Pro Pro Leu Glu Asp  
 340 345 350

Ile Ala Asp Asp Cys Ser Pro Gly Met Arg Glu Leu Ile Glu Ala Ser  
 355 360 365

Leu Glu Arg Asn Pro Asn His Arg Pro Arg Ala Ala Asp Leu Leu Lys  
 370 375 380

His Glu Ala Leu Asn Pro Pro Arg Glu Asp Gln Pro Arg Cys Gln Ser  
 385 390 395 400

Leu Asp Ser Ala Leu Leu Glu Arg Lys Arg Leu Leu Ser Arg Lys Glu  
 405 410 415

Leu Glu Leu Pro Glu Asn Ile Ala Asp Ser Ser Cys Thr Gly Ser Thr  
 420 425 430

Glu Glu Ser Glu Met Leu Lys Arg Gln Arg Ser Leu Tyr Ile Asp Leu  
 435 440 445

Gly Ala Leu Ala Gly Tyr Phe Asn Leu Val Arg Gly Pro Pro Thr Leu  
 450 455 460

Glu Tyr Gly  
 465

<210> 45  
 <211> 1629  
 <212> DNA  
 <213> Homo sapiens

<400> 45  
 atggccgcgg ccaaggccga gatgcagctg atgtccccgc tgcagatctc tgaccgcgttc 60  
 ggatcctttc ctactcgcg caccatggac aactacccta agctggagga gatgatgctg 120  
 ctgagcaacg gggctcccca gttcctcggc gccgcggggg cccagagggg cagcggcagc 180  
 aacagcagca gcagcagcag cgggggcggg ggaggcgggc ggggcggcag caacagcagc 240  
 agcagcagca gcaccttcaa ccctcaggcg gacacggggc agcagcccta cgagcacctg 300  
 accgcagagt cttttcctga catctctctg aacaacgaga aggtgctggg ggagaccagt 360  
 taccacagcc aaaccactcg actgcccccc atcacctata ctggccgctt ttccctggag 420  
 cctgcaccca acagtggcaa caccttgtag cccgagcccc tcttcagctt ggtcagtggc 480  
 ctagttagca tgaccaacc accggcctcc tcgtcctcag caccatctcc agcggcctcc 540  
 tccgcctccg cctcccagag cccaccctg agctgcgcag tgccatcaa cgacagcagt 600  
 cccatttact cagcggcacc caccttcccc acgccgaaca ctgacatttt ccctgagcca 660  
 caaagccagg ccttcccggg ctcggcaggg acagcgctcc agtaccgcc tctgcctac 720  
 cctgccgcca aggggtggctt ccaggttccc atgatccccg actacctgtt tccacagcag 780  
 caggggggatc tgggcctggg caccacagac cagaagccct tccagggcct ggagagccgc 840  
 acccagcagc cttcgctaac ccctctgtct actattaagg cctttgccac tcagtcgggc 900  
 tcccaggacc tgaaggccct caataccagc taccagtccc agctcatcaa acccagccgc 960  
 atgcgcaagt accccaaccg gccagcaag acgccccccc acgaacgcc ttacgcttgc 1020  
 ccagtggagt cctgtgatcg ccgtttctcc cgctccgacg agctcaccgc ccacatccgc 1080  
 atccacacag gccagaagcc cttccagtgc cgcatctgca tgcgcaactt cagccgcagc 1140  
 gaccacctca ccaccacat ccgcacccac acaggcgaaa agcccttcgc ctgcgacatc 1200

```

tgtggaagaa agtttgccag gagcgatgaa cgcaagaggc ataccaagat ccacttgcgg      1260
cagaaggaca agaaagcaga caaaagtgtt gtggcctctt cggccacctc ctctctctct      1320
tcctaccogt ccccggttgc tacctcttac ccgtccccgg ttactacctc ttatccatcc      1380
ccggccacca cctcataccc atcccctgtg cccacctcct tctcctctcc cggctcctcg      1440
acctacccat cccctgtgca cagtggcttc cctccccogt cggtgggcac cacgtactcc      1500
tctgttcccc ctgctttccc ggcccaggtc agcagcttcc cttcctcagc tgtcaccaac      1560
tccttcagcg cctccacagg gctttcggac atgacagcaa ctttttctcc caggacaatt      1620
gaaatttgc                                     1629

```

<210> 46

<211> 543

<212> PRT

<213> Homo sapiens

<400> 46

```

Met Ala Ala Ala Lys Ala Glu Met Gln Leu Met Ser Pro Leu Gln Ile
1             5             10             15

```

```

Ser Asp Pro Phe Gly Ser Phe Pro His Ser Pro Thr Met Asp Asn Tyr
             20             25             30

```

```

Pro Lys Leu Glu Glu Met Met Leu Leu Ser Asn Gly Ala Pro Gln Phe
             35             40             45

```

```

Leu Gly Ala Ala Gly Ala Pro Glu Gly Ser Gly Ser Asn Ser Ser Ser
50             55             60

```

```

Ser Ser Ser Gly Gly Gly Gly Gly Gly Gly Gly Gly Ser Asn Ser Ser
65             70             75             80

```

```

Ser Ser Ser Ser Thr Phe Asn Pro Gln Ala Asp Thr Gly Glu Gln Pro
             85             90             95

```

```

Tyr Glu His Leu Thr Ala Glu Ser Phe Pro Asp Ile Ser Leu Asn Asn
             100            105            110

```

```

Glu Lys Val Leu Val Glu Thr Ser Tyr Pro Ser Gln Thr Thr Arg Leu
115             120             125

```

```

Pro Pro Ile Thr Tyr Thr Gly Arg Phe Ser Leu Glu Pro Ala Pro Asn
130             135             140

```

Ser Gly Asn Thr Leu Trp Pro Glu Pro Leu Phe Ser Leu Val Ser Gly  
145 150 155 160

Leu Val Ser Met Thr Asn Pro Pro Ala Ser Ser Ser Ser Ala Pro Ser  
165 170 175

Pro Ala Ala Ser Ser Ala Ser Ala Ser Gln Ser Pro Pro Leu Ser Cys  
180 185 190

Ala Val Pro Ser Asn Asp Ser Ser Pro Ile Tyr Ser Ala Ala Pro Thr  
195 200 205

Phe Pro Thr Pro Asn Thr Asp Ile Phe Pro Glu Pro Gln Ser Gln Ala  
210 215 220

Phe Pro Gly Ser Ala Gly Thr Ala Leu Gln Tyr Pro Pro Pro Ala Tyr  
225 230 235 240

Pro Ala Ala Lys Gly Gly Phe Gln Val Pro Met Ile Pro Asp Tyr Leu  
245 250 255

Phe Pro Gln Gln Gln Gly Asp Leu Gly Leu Gly Thr Pro Asp Gln Lys  
260 265 270

Pro Phe Gln Gly Leu Glu Ser Arg Thr Gln Gln Pro Ser Leu Thr Pro  
275 280 285

Leu Ser Thr Ile Lys Ala Phe Ala Thr Gln Ser Gly Ser Gln Asp Leu  
290 295 300

Lys Ala Leu Asn Thr Ser Tyr Gln Ser Gln Leu Ile Lys Pro Ser Arg  
305 310 315 320

Met Arg Lys Tyr Pro Asn Arg Pro Ser Lys Thr Pro Pro His Glu Arg  
325 330 335

Pro Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser Arg Ser  
340 345 350

Asp Glu Leu Thr Arg His Ile Arg Ile His Thr Gly Gln Lys Pro Phe  
355 360 365

Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr  
 370 375 380

Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Ile  
 385 390 395 400

Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys  
 405 410 415

Ile His Leu Arg Gln Lys Asp Lys Lys Ala Asp Lys Ser Val Val Ala  
 420 425 430

Ser Ser Ala Thr Ser Ser Leu Ser Ser Tyr Pro Ser Pro Val Ala Thr  
 435 440 445

Ser Tyr Pro Ser Pro Val Thr Thr Ser Tyr Pro Ser Pro Ala Thr Thr  
 450 455 460

Ser Tyr Pro Ser Pro Val Pro Thr Ser Phe Ser Ser Pro Gly Ser Ser  
 465 470 475 480

Thr Tyr Pro Ser Pro Val His Ser Gly Phe Pro Ser Pro Ser Val Ala  
 485 490 495

Thr Thr Tyr Ser Ser Val Pro Pro Ala Phe Pro Ala Gln Val Ser Ser  
 500 505 510

Phe Pro Ser Ser Ala Val Thr Asn Ser Phe Ser Ala Ser Thr Gly Leu  
 515 520 525

Ser Asp Met Thr Ala Thr Phe Ser Pro Arg Thr Ile Glu Ile Cys  
 530 535 540

<210> 47  
 <211> 1161  
 <212> DNA  
 <213> Homo sapiens

<400> 47  
 atgaccggca aactcgccga gaagctgccg gtgaccatga gcagtttgct aaaccaactg 60  
 cctgacaatc tgtaccccgga ggagatcccc agcgcgctca acctcttctc cggcagcagc 120  
 gactcggtag tccattacaa tcagatggct acagagaatg taatggacat cggtctgacc 180  
 aacgagaagc ccaaccogga actctcttac tccggctcct tccagccagc ccccggaac 240

```

aagaccgtga cctacttggg aaagttcgcc ttcgactccc cttccaactg gtgccaggac      300
aacatcatta gcctcatgag cgccggcatc ttgggggtgc ccccggttc aggggcgctc      360
agcacgcaga cgtccacggc cagcatggtg cagccaccgc agggtgacgt ggaggccatg      420
tatcccgcg cgtacccctta ctccaactgc ggcgacctct actcagagcc cgtgtctttc      480
cacgaccccc agggcaatcc cgggctcgcc tattcccccc aggattacca atcggccaag      540
ccggcggttg acagcaatct cttccccatg attcctgact acaacctcta ccaccacccc      600
aacgacatgg gctccattcc ggagcacaag cccttccagg gcatggaccc catccgggtc      660
aaccgcccc ctattacccc tctggagacc atcaaggcat tcaaagacaa gcagatccac      720
ccgggctttg gcagcctgcc ccagccgccc ctcacctca agcccatccg gccccgcaag      780
taccccaacc ggcttagcaa gacaccgctc cacgaacggc cccacgcgtg cccggccgag      840
ggctgcgacc gccgtttcag ccgttcggac gagctgaccc ggcacctgcg catccacacg      900
ggccacaagc ccttccagtg ccgatctgc atgaggagct tcagccgcag cgaccacctc      960
accactcaca tccgcactca tacgggagag aagccctttg cctgcgagtt ctgcggggcg      1020
aagtttgcg gcagcgacga gcgcaagcg caccgccaaga tccacctcaa gaaaaggag      1080
aagaaggcgg agaaggcg tgcacctct gcactctcg cgcccccg gtcgctggcc      1140
cccggtgtca ccacctgcgc c                                     1161

```

```

<210> 48
<211> 387
<212> PRT
<213> Homo sapiens

```

```

<400> 48
Met Thr Gly Lys Leu Ala Glu Lys Leu Pro Val Thr Met Ser Ser Leu
1           5           10          15

```

```

Leu Asn Gln Leu Pro Asp Asn Leu Tyr Pro Glu Glu Ile Pro Ser Ala
20           25           30

```

```

Leu Asn Leu Phe Ser Gly Ser Ser Asp Ser Val Val His Tyr Asn Gln
35           40           45

```

```

Met Ala Thr Glu Asn Val Met Asp Ile Gly Leu Thr Asn Glu Lys Pro
50           55           60

```

```

Asn Pro Glu Leu Ser Tyr Ser Gly Ser Phe Gln Pro Ala Pro Gly Asn
65           70           75           80

```

Lys Thr Val Thr Tyr Leu Gly Lys Phe Ala Phe Asp Ser Pro Ser Asn  
85 90 95

Trp Cys Gln Asp Asn Ile Ile Ser Leu Met Ser Ala Gly Ile Leu Gly  
100 105 110

Val Pro Pro Ala Ser Gly Ala Leu Ser Thr Gln Thr Ser Thr Ala Ser  
115 120 125

Met Val Gln Pro Pro Gln Gly Asp Val Glu Ala Met Tyr Pro Ala Leu  
130 135 140

Pro Pro Tyr Ser Asn Cys Gly Asp Leu Tyr Ser Glu Pro Val Ser Phe  
145 150 155 160

His Asp Pro Gln Gly Asn Pro Gly Leu Ala Tyr Ser Pro Gln Asp Tyr  
165 170 175

Gln Ser Ala Lys Pro Ala Leu Asp Ser Asn Leu Phe Pro Met Ile Pro  
180 185 190

Asp Tyr Asn Leu Tyr His His Pro Asn Asp Met Gly Ser Ile Pro Glu  
195 200 205

His Lys Pro Phe Gln Gly Met Asp Pro Ile Arg Val Asn Pro Pro Pro  
210 215 220

Ile Thr Pro Leu Glu Thr Ile Lys Ala Phe Lys Asp Lys Gln Ile His  
225 230 235 240

Pro Gly Phe Gly Ser Leu Pro Gln Pro Pro Leu Thr Leu Lys Pro Ile  
245 250 255

Arg Pro Arg Lys Tyr Pro Asn Arg Pro Ser Lys Thr Pro Leu His Glu  
260 265 270

Arg Pro His Ala Cys Pro Ala Glu Gly Cys Asp Arg Arg Phe Ser Arg  
275 280 285

Ser Asp Glu Leu Thr Arg His Leu Arg Ile His Thr Gly His Lys Pro  
290 295 300

Phe Gln Cys Arg Ile Cys Met Arg Ser Phe Ser Arg Ser Asp His Leu  
305 310 315 320

Thr Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Glu  
325 330 335

Phe Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Ala  
340 345 350

Lys Ile His Leu Lys Gln Lys Glu Lys Lys Ala Glu Lys Gly Gly Ala  
355 360 365

Pro Ser Ala Ser Ser Ala Pro Pro Val Ser Leu Ala Pro Val Val Thr  
370 375 380

Thr Cys Ala  
385

<210> 49  
<211> 2850  
<212> DNA  
<213> Homo sapiens

<400> 49  
atggggaacg cggagcgggc tccggggtct cggagctttg ggcccgtacc cacgctgctg 60  
ctgctcgccg cggcgctact ggccgtgtcg gacgcaactcg ggcccccctc cgaggaggac 120  
gaggagctag tggtgccgga gctggagcgc gccccgggac acgggaccac gcgcctccgc 180  
ctgcacgcct ttgaccagca gctggatctg gagctgcggc cgcacagcag ctttttggcg 240  
cccggcttca cgctccagaa cgtggggcgc aaatccgggt ccgagacgcc gcttccggaa 300  
accgacctgg cgcactgctt ctactccggc accgtgaatg gcgatcccag ctcggtgcc 360  
gccctcagcc tctgcgaggg cgtgcgcggc gccttctacc tgctggggga ggcgtatttc 420  
atccagccgc tgcccgccgc cagcgagcgc ctgccaccg ccgccccagg ggagaagccg 480  
ccggcaccac tacagttcca cctcctgcgg cggaatcggc agggcgacgt cggcggcacg 540  
tgccggggtcg tggacgacga gccccggccg actgggaaag cggagaccga agacgaggac 600  
gaagggactg agggcgagga cgaaggggct cagtggtcgc cgcaggaccc ggcactgcaa 660  
ggcgtaggac agcccacagg aactggaagc ataagaaaga agcgatttgt gtccagtcac 720  
cgctatgtgg aaaccatgct tgtggcagac cagtcgatgg cagaattcca cggcagtgg 780  
ctaaagcatt accttctcac gttgttttcg gtggcagcca gattgtacaa acaccccagc 840



attcgtaatt	cagttagcct	ggtggtggtg	aagatcttgg	tcacccacga	tgaacagaag	900
gggccggaag	tgacctccaa	tgctgccctc	actctgcgga	acttttgcaa	ctggcagaag	960
cagcacaacc	cacccagtga	ccgggatgca	gagcactatg	acacagcaat	tcttttcacc	1020
agacaggact	tgtgtgggtc	ccagacatgt	gatactcttg	ggatggctga	tgttggaact	1080
gtgtgtgatc	cgagcagaag	ctgctccgtc	atagaagatg	atggtttaca	agctgccttc	1140
accacagccc	atgaattagg	ccacgtgttt	aacatgccac	atgatgatgc	aaagcagtgt	1200
gccagcctta	atggtgtgaa	ccaggattcc	cacatgatgg	cgtcaatgct	ttccaacctg	1260
gaccacagcc	agccttggtc	tccttgacgt	gcctacatga	ttacatcatt	tctggataat	1320
ggtcatgggg	aatgtttgat	ggacaagcct	cagaatccca	tacagctccc	aggcgatctc	1380
cctggcacct	cgtacgatgc	caaccggcag	tgccagttta	catttgggga	ggactccaaa	1440
cactgccccg	atgcagccag	cacatgtagc	accttgtggt	gtaccggcac	ctctgggtggg	1500
gtgctgggtg	gtcaaaccaa	acacttcccg	tgggcggatg	gcaccagctg	tggagaaggg	1560
aaatggtgta	tcaacggcaa	gtgtgtgaac	aaaaccgaca	gaaagcattt	tgatacgctt	1620
tttcatggaa	gctggggaat	gtgggggcct	tggggagact	gttcgagaac	gtgcggtgga	1680
ggagtccagt	acacgatgag	ggaatgtgac	aaccaggtcc	caaagaatgg	agggaagtac	1740
tgtgaaggca	aacgagtgcg	ctacagatcc	tgtaaccttg	aggactgtcc	agacaataat	1800
ggaaaaacct	ttagagagga	acaatgtgaa	gcacacaacg	agttttcaaa	agcttccttt	1860
gggagtgggc	ctgcggtgga	atggattccc	aagtacgctg	gcgtctcacc	aaaggacagg	1920
tgcaagctca	tctgccaagc	caaaggcatt	ggctacttct	tcgttttgca	gccaaggtt	1980
gtagatggta	ctccatgtag	cccagattcc	acctctgtct	gtgtgcaagg	acagtgtgta	2040
aaagctgggt	gtgatcgcat	catagactcc	aaaaagaagt	ttgataaatg	tgggtgtttgc	2100
gggggaaatg	gatctacttg	taaaaaata	tcaggatcag	ttactagtgc	aaaacctgga	2160
tatcatgata	tcacacaat	tccaactgga	gccaccaaca	tcgaagtga	acagcggaac	2220
cagaggggat	ccaggaacaa	tggcagcttt	cttgccatca	aagctgctga	tggcacatat	2280
attcttaatg	gtgactacac	tttgtccacc	ttagagcaag	acattatgta	caaagggtgt	2340
gtcttgaggt	acagcggtc	ctctgcggca	ttggaaagaa	ttcgagctt	tagccctctc	2400
aaagagccct	tgaccatcca	ggttcttact	gtgggcaatg	cccttcgacc	taaaattaaa	2460
tacacctact	tcgtaaagaa	gaagaaggaa	tctttcaatg	ctatccccac	tttttcagca	2520
tgggtcattg	aagagtgggg	cgaatgttct	aagtcatgtg	aattgggttg	gcagagaaga	2580

ctggtagaat gccgagacat taatggacag cctgcttccg agtgtgcaaa ggaagtgaag 2640  
ccagccagca ccagaccttg tgcagacat ccctgcccc agtggcagct gggggagtgg 2700  
tcatcatgtt ctaagacctg tgggaagggt tacaaaaaaa gaagcttgaa gtgtctgtcc 2760  
catgatggag ggggtgttatc tcatgagagc tgtgatcctt taaagaaacc taaacatttc 2820  
atagactttt gcacaatggc agaatgcagt 2850

<210> 50

<211> 950

<212> PRT

<213> Homo sapiens

<400> 50

Met Gly Asn Ala Glu Arg Ala Pro Gly Ser Arg Ser Phe Gly Pro Val  
1 5 10 15

Pro Thr Leu Leu Leu Leu Ala Ala Ala Leu Leu Ala Val Ser Asp Ala  
20 25 30

Leu Gly Arg Pro Ser Glu Glu Asp Glu Glu Leu Val Val Pro Glu Leu  
35 40 45

Glu Arg Ala Pro Gly His Gly Thr Thr Arg Leu Arg Leu His Ala Phe  
50 55 60

Asp Gln Gln Leu Asp Leu Glu Leu Arg Pro Asp Ser Ser Phe Leu Ala  
65 70 75 80

Pro Gly Phe Thr Leu Gln Asn Val Gly Arg Lys Ser Gly Ser Glu Thr  
85 90 95

Pro Leu Pro Glu Thr Asp Leu Ala His Cys Phe Tyr Ser Gly Thr Val  
100 105 110

Asn Gly Asp Pro Ser Ser Ala Ala Ala Leu Ser Leu Cys Glu Gly Val  
115 120 125

Arg Gly Ala Phe Tyr Leu Leu Gly Glu Ala Tyr Phe Ile Gln Pro Leu  
130 135 140

Pro Ala Ala Ser Glu Arg Leu Ala Thr Ala Ala Pro Gly Glu Lys Pro  
145 150 155 160

Pro Ala Pro Leu Gln Phe His Leu Leu Arg Arg Asn Arg Gln Gly Asp  
 165 170 175

Val Gly Gly Thr Cys Gly Val Val Asp Asp Glu Pro Arg Pro Thr Gly  
 180 185 190

Lys Ala Glu Thr Glu Asp Glu Asp Glu Gly Thr Glu Gly Glu Asp Glu  
 195 200 205

Gly Ala Gln Trp Ser Pro Gln Asp Pro Ala Leu Gln Gly Val Gly Gln  
 210 215 220

Pro Thr Gly Thr Gly Ser Ile Arg Lys Lys Arg Phe Val Ser Ser His  
 225 230 235 240

Arg Tyr Val Glu Thr Met Leu Val Ala Asp Gln Ser Met Ala Glu Phe  
 245 250 255

His Gly Ser Gly Leu Lys His Tyr Leu Leu Thr Leu Phe Ser Val Ala  
 260 265 270

Ala Arg Leu Tyr Lys His Pro Ser Ile Arg Asn Ser Val Ser Leu Val  
 275 280 285

Val Val Lys Ile Leu Val Ile His Asp Glu Gln Lys Gly Pro Glu Val  
 290 295 300

Thr Ser Asn Ala Ala Leu Thr Leu Arg Asn Phe Cys Asn Trp Gln Lys  
 305 310 315 320

Gln His Asn Pro Pro Ser Asp Arg Asp Ala Glu His Tyr Asp Thr Ala  
 325 330 335

Ile Leu Phe Thr Arg Gln Asp Leu Cys Gly Ser Gln Thr Cys Asp Thr  
 340 345 350

Leu Gly Met Ala Asp Val Gly Thr Val Cys Asp Pro Ser Arg Ser Cys  
 355 360 365

Ser Val Ile Glu Asp Asp Gly Leu Gln Ala Ala Phe Thr Thr Ala His  
 370 375 380

Glu Leu Gly His Val Phe Asn Met Pro His Asp Asp Ala Lys Gln Cys  
 385 390 395 400

Ala Ser Leu Asn Gly Val Asn Gln Asp Ser His Met Met Ala Ser Met  
                   405                                  410                                  415

Leu Ser Asn Leu Asp His Ser Gln Pro Trp Ser Pro Cys Ser Ala Tyr  
                   420                                  425                                  430

Met Ile Thr Ser Phe Leu Asp Asn Gly His Gly Glu Cys Leu Met Asp  
                   435                                  440                                  445

Lys Pro Gln Asn Pro Ile Gln Leu Pro Gly Asp Leu Pro Gly Thr Ser  
                   450                                  455                                  460

Tyr Asp Ala Asn Arg Gln Cys Gln Phe Thr Phe Gly Glu Asp Ser Lys  
                   465                                  470                                  475                                  480

His Cys Pro Asp Ala Ala Ser Thr Cys Ser Thr Leu Trp Cys Thr Gly  
                   485                                  490                                  495

Thr Ser Gly Gly Val Leu Val Cys Gln Thr Lys His Phe Pro Trp Ala  
                   500                                  505                                  510

Asp Gly Thr Ser Cys Gly Glu Gly Lys Trp Cys Ile Asn Gly Lys Cys  
                   515                                  520                                  525

Val Asn Lys Thr Asp Arg Lys His Phe Asp Thr Pro Phe His Gly Ser  
                   530                                  535                                  540

Trp Gly Met Trp Gly Pro Trp Gly Asp Cys Ser Arg Thr Cys Gly Gly  
                   545                                  550                                  555                                  560

Gly Val Gln Tyr Thr Met Arg Glu Cys Asp Asn Pro Val Pro Lys Asn  
                   565                                  570                                  575

Gly Gly Lys Tyr Cys Glu Gly Lys Arg Val Arg Tyr Arg Ser Cys Asn  
                   580                                  585                                  590

Leu Glu Asp Cys Pro Asp Asn Asn Gly Lys Thr Phe Arg Glu Glu Gln  
                   595                                  600                                  605

Cys Glu Ala His Asn Glu Phe Ser Lys Ala Ser Phe Gly Ser Gly Pro  
                   610                                  615                                  620

Ala Val Glu Trp Ile Pro Lys Tyr Ala Gly Val Ser Pro Lys Asp Arg  
625 630 635 640

Cys Lys Leu Ile Cys Gln Ala Lys Gly Ile Gly Tyr Phe Phe Val Leu  
645 650 655

Gln Pro Lys Val Val Asp Gly Thr Pro Cys Ser Pro Asp Ser Thr Ser  
660 665 670

Val Cys Val Gln Gly Gln Cys Val Lys Ala Gly Cys Asp Arg Ile Ile  
675 680 685

Asp Ser Lys Lys Lys Phe Asp Lys Cys Gly Val Cys Gly Gly Asn Gly  
690 695 700

Ser Thr Cys Lys Lys Ile Ser Gly Ser Val Thr Ser Ala Lys Pro Gly  
705 710 715 720

Tyr His Asp Ile Ile Thr Ile Pro Thr Gly Ala Thr Asn Ile Glu Val  
725 730 735

Lys Gln Arg Asn Gln Arg Gly Ser Arg Asn Asn Gly Ser Phe Leu Ala  
740 745 750

Ile Lys Ala Ala Asp Gly Thr Tyr Ile Leu Asn Gly Asp Tyr Thr Leu  
755 760 765

Ser Thr Leu Glu Gln Asp Ile Met Tyr Lys Gly Val Val Leu Arg Tyr  
770 775 780

Ser Gly Ser Ser Ala Ala Leu Glu Arg Ile Arg Ser Phe Ser Pro Leu  
785 790 795 800

Lys Glu Pro Leu Thr Ile Gln Val Leu Thr Val Gly Asn Ala Leu Arg  
805 810 815

Pro Lys Ile Lys Tyr Thr Tyr Phe Val Lys Lys Lys Lys Glu Ser Phe  
820 825 830

Asn Ala Ile Pro Thr Phe Ser Ala Trp Val Ile Glu Glu Trp Gly Glu  
835 840 845

Cys Ser Lys Ser Cys Glu Leu Gly Trp Gln Arg Arg Leu Val Glu Cys  
850 855 860

Arg Asp Ile Asn Gly Gln Pro Ala Ser Glu Cys Ala Lys Glu Val Lys  
865 870 875 880

Pro Ala Ser Thr Arg Pro Cys Ala Asp His Pro Cys Pro Gln Trp Gln  
885 890 895

Leu Gly Glu Trp Ser Ser Cys Ser Lys Thr Cys Gly Lys Gly Tyr Lys  
900 905 910

Lys Arg Ser Leu Lys Cys Leu Ser His Asp Gly Gly Val Leu Ser His  
915 920 925

Glu Ser Cys Asp Pro Leu Lys Lys Pro Lys His Phe Ile Asp Phe Cys  
930 935 940

Thr Met Ala Glu Cys Ser  
945 950

<210> 51  
<211> 705  
<212> DNA  
<213> Homo sapiens

<400> 51  
atggaccccg ctgccccct ggggctgtcg attctgctgc ttttcctgac ggaggctgca 60  
ctgggcatg ctgctcagga gccaacagga aataacgcgg agatctgtct cctgccccta 120  
gactacggac cctgccgggc cctacttctc cgttactact acgacaggta cacgcagagc 180  
tgccgccagt tctgtacgg gggctgagag ggcaacgcca acaatttcta cacctgggag 240  
gcttgcgacg atgcttgctg gaggatagaa aaagttccca aagtttgccg gctgcaagtg 300  
agtgtggacg accagtgtga ggggtccaca gaaaagtatt tctttaatct aagttccatg 360  
acatgtgaaa aattcttttc cggtgggtgt caccggaacc ggattgagaa cagggtttcca 420  
gatgaagcta cttgtatggg cttctgcgca ccaaagaaaa ttccatcatt ttgctacagt 480  
ccaaaagatg agggactgtg ctctgccaat gtgactcgct attattttta tccaagatac 540  
agaacctgtg atgctttcac ctatactggc tgtggaggga atgacaataa ctttgttage 600  
agggaggatt gcaaacgtgc atgtgcaaaa gctttgaaaa agaaaaagaa gatgccaaag 660  
cttcgctttg ccagtagaat ccgaaaaatt cggaagaagc aattt 705

<210> 52  
 <211> 235  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
 Met Asp Pro Ala Arg Pro Leu Gly Leu Ser Ile Leu Leu Leu Phe Leu  
 1 5 10 15  
 Thr Glu Ala Ala Leu Gly Asp Ala Ala Gln Glu Pro Thr Gly Asn Asn  
 20 25 30  
 Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala Leu  
 35 40 45  
 Leu Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln Phe  
 50 55 60  
 Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp Glu  
 65 70 75 80  
 Ala Cys Asp Asp Ala Cys Trp Arg Ile Glu Lys Val Pro Lys Val Cys  
 85 90 95  
 Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu Gly Ser Thr Glu Lys  
 100 105 110  
 Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu Lys Phe Phe Ser Gly  
 115 120 125  
 Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe Pro Asp Glu Ala Thr  
 130 135 140  
 Cys Met Gly Phe Cys Ala Pro Lys Lys Ile Pro Ser Phe Cys Tyr Ser  
 145 150 155 160  
 Pro Lys Asp Glu Gly Leu Cys Ser Ala Asn Val Thr Arg Tyr Tyr Phe  
 165 170 175  
 Asn Pro Arg Tyr Arg Thr Cys Asp Ala Phe Thr Tyr Thr Gly Cys Gly  
 180 185 190  
 Gly Asn Asp Asn Asn Phe Val Ser Arg Glu Asp Cys Lys Arg Ala Cys  
 195 200 205

Ala Lys Ala Leu Lys Lys Lys Lys Lys Met Pro Lys Leu Arg Phe Ala  
 210 215 220

Ser Arg Ile Arg Lys Ile Arg Lys Lys Gln Phe  
 225 230 235

<210> 53  
 <211> 756  
 <212> DNA  
 <213> Homo sapiens

<400> 53  
 atgggggtac tgctcacaca gaggacgctg ctcagtctgg tccttgcaact cctgtttcca 60  
 agcatggcga gcatggcggc tataggcagc tgctcgaaag agtaccgcgt gtcctttggc 120  
 cagctccaga agcagacaga tctcatgcag gacaccagca gactcctgga cccctatata 180  
 cgtatccaag gcctggatgt tcctaaactg agagagcact gcagggagcg ccccgggggc 240  
 ttccccagtg aggagaccct gagggggctg ggcaggcggg gcttcctgca gacctcaat 300  
 gccacactgg gctgcgtcct gcacagactg gccgacttag agcagcgcct cccaaggcc 360  
 caggatttgg agaggtctgg gctgaacatc gaggacttgg agaagctgca gatggcgagg 420  
 ccgaacatcc tcgggctcag gaacaacatc tactgcatgg ccagctgct ggacaactca 480  
 gacacggctg agcccacgaa ggctggcggg ggggcctctc agccgcccac cccacccct 540  
 gcctcggatg cttttcagcg caagctggag ggctgcaggt tcctgcatgg ctaccatcgc 600  
 ttcatgcact cagtggggcg ggtcttcagc aagtgggggg agagcccgaa ccggagccgg 660  
 agacacagcc cccaccaggc cctgaggaag ggggtgcgca ggaccagacc ctccaggaaa 720  
 ggcaagagac tcatgaccag gggacagctg ccccg 756

<210> 54  
 <211> 252  
 <212> PRT  
 <213> Homo sapiens

<400> 54  
 Met Gly Val Leu Leu Thr Gln Arg Thr Leu Leu Ser Leu Val Leu Ala  
 1 5 10 15

Leu Leu Phe Pro Ser Met Ala Ser Met Ala Ala Ile Gly Ser Cys Ser  
 20 25 30

Lys Glu Tyr Arg Val Leu Leu Gly Gln Leu Gln Lys Gln Thr Asp Leu  
 35 40 45



Met Gln Asp Thr Ser Arg Leu Leu Asp Pro Tyr Ile Arg Ile Gln Gly  
 50 55 60

Leu Asp Val Pro Lys Leu Arg Glu His Cys Arg Glu Arg Pro Gly Ala  
 65 70 75 80

Phe Pro Ser Glu Glu Thr Leu Arg Gly Leu Gly Arg Arg Gly Phe Leu  
 85 90 95

Gln Thr Leu Asn Ala Thr Leu Gly Cys Val Leu His Arg Leu Ala Asp  
 100 105 110

Leu Glu Gln Arg Leu Pro Lys Ala Gln Asp Leu Glu Arg Ser Gly Leu  
 115 120 125

Asn Ile Glu Asp Leu Glu Lys Leu Gln Met Ala Arg Pro Asn Ile Leu  
 130 135 140

Gly Leu Arg Asn Asn Ile Tyr Cys Met Ala Gln Leu Leu Asp Asn Ser  
 145 150 155 160

Asp Thr Ala Glu Pro Thr Lys Ala Gly Arg Gly Ala Ser Gln Pro Pro  
 165 170 175

Thr Pro Thr Pro Ala Ser Asp Ala Phe Gln Arg Lys Leu Glu Gly Cys  
 180 185 190

Arg Phe Leu His Gly Tyr His Arg Phe Met His Ser Val Gly Arg Val  
 195 200 205

Phe Ser Lys Trp Gly Glu Ser Pro Asn Arg Ser Arg Arg His Ser Pro  
 210 215 220

His Gln Ala Leu Arg Lys Gly Val Arg Arg Thr Arg Pro Ser Arg Lys  
 225 230 235 240

Gly Lys Arg Leu Met Thr Arg Gly Gln Leu Pro Arg  
 245 250

<210> 55  
 <211> 6603  
 <212> DNA  
 <213> Homo sapiens

<400> 55  
 atggggggcca tgactcagct gttggcaggt gtctttcttg ctttccttgc cctcgctacc 60  
 gaaggtgggg tcctcaagaa agtcatccgg cacaagcgac agagtggggt gaacgccacc 120  
 ctgccagaag agaaccagcc agtgggtgttt aaccacgttt acaacatcaa gctgccagtg 180  
 ggatcccagt gttcggtgga tctggagtca gccagtgggg agaaagacct ggcaccgcct 240  
 tcagagccca gcgaaagctt tcaggagcac acagtagatg gggaaaacca gattgtcttc 300  
 acacatcgca tcaacatccc ccgccggggc tgtggctgtg ccgcagcccc tgatgttaag 360  
 gagctgctga gcagactgga ggagctggag aacctgggtg cttccctgag ggagcaatgt 420  
 actgcaggag caggctgctg tctccagcct gccacaggcc gcttggacac caggcccttc 480  
 tgtagcggtc ggggcaactt cagcactgaa ggatgtggct gtgtctgcga acctggctgg 540  
 aaaggcccca actgctctga gcccgaaatgt ccaggcaact gtcaccttcg aggccggtgc 600  
 attgatgggc agtgcatctg tgacgacggc ttacaggcg aggactgcag ccagctggct 660  
 tgccccagcg actgcaatga ccagggcaag tgcgtgaatg gagtctgcat ctgtttcgaa 720  
 ggctacgccg gggctgactg cagccgtgaa atctgcccag tgccctgcag tgaggagcac 780  
 ggcacatgtg tagatggctt gtgtgtgtgc cacgatggct ttgcaggcga tgactgcaac 840  
 aagcctctgt gtctcaacaa ttgctacaac cgtggacgat gcgtggagaa tgagtgcgtg 900  
 tgtgatgagg gtttcacggg cgaagactgc agtgagctca tctgccccaa tgactgcttc 960  
 gaccggggcc gctgcatcaa tggcacctgc tactgcgaag aaggcttcac aggtgaagac 1020  
 tgcgggaaac ccacctgcc acatgcctgc cacaccagc gccggtgtga ggaggggcag 1080  
 tgtgtatgtg atgagggtt tgccggtttg gactgcagcg agaagaggtg tcctgctgac 1140  
 tgtcacaatc gtggccgtg tgtagacggg cgggtgtgagt gtgatgatgg ttctactgga 1200  
 gctgactgtg gggagctcaa gtgtcccaat ggctgcagtg gccatggccg ctgtgtcaat 1260  
 gggcagtgtg tgtgtgatga gggctatact ggggaggact gcagccagct acgggtgcccc 1320  
 aatgactgtc acagtcgggg ccgctgtgtc gagggcaaat gtgtatgtga gcaaggcttc 1380  
 aagggtatg actgcagtga catgagctgc cctaatact gtcaccagca cggccgctgt 1440  
 gtgaatggca tgttgtttt tgatgacggc tacacagggg aagactgccg ggatcgccaa 1500  
 tgccccaggg actgcagcaa caggggcctc tgtgtggacg gacagtgcgt ctgtgaggac 1560  
 ggcttcaccg gccctgactg tgcagaactc tcctgtccaa atgactgcca tggccaggg 1620  
 cgctgtgtga atgggcagtg cgtgtgccat gaaggattta tgggcaaaga ctgcaaggag 1680  
 caaagatgtc ccagtgactg tcatggccag ggccgctgcg tggacggcca gtgcatctgc 1740

cacgagggct	tcacaggcct	ggactgtggc	cagcactcct	gccccagtga	ctgcaacaac	1800
ttaggacaat	gcgtctcggg	ccgctgcac	tgcaacgagg	gctacagcgg	agaagactgc	1860
tcagaggtgt	ctcctcccaa	agacctcggt	gtgacagaag	tgacggaaga	gacggtcaac	1920
ctggcctggg	acaatgagat	gcgggtcaca	gagtaccttg	tcgtgtacac	gcccacccac	1980
gaggggtggc	tggaaatgca	gttccgtgtg	cctggggacc	agacgtccac	catcatccag	2040
gagctggagc	ctgggtgtga	gtactttatc	cgtgtatttg	ccatcctgga	gaacaagaag	2100
agcattcctg	tcagcgccag	gggtggccacg	tacttacctg	cacctgaagg	cctgaaattc	2160
aagtccatca	aggagacatc	tgtggaagtg	gagtgggatc	ctctagacat	tgcttttgaa	2220
acctgggaga	tcatcttccg	gaatatgaat	aaagaagatg	agggagagat	cacaaaaagc	2280
ctgaggaggc	cagagacctc	ttaccggcaa	actggtctag	ctcctgggca	agagtatgag	2340
atatctctgc	acatagtga	aaacaatacc	cggggccctg	gcctgaagag	ggtgaccacc	2400
acacgcttgg	atgccccag	ccagatcgag	gtgaaagatg	tcacagacac	cactgccttg	2460
atcacctgg	tcaagcccct	ggctgagatc	gatggcattg	agctgacctc	cggcatcaaa	2520
gacgtgccag	gagaccgtac	caccatcgat	ctcacagagg	acgagaacca	gtactccatc	2580
gggaacctga	agcctgacac	tgagtacgag	gtgtccctca	tctcccgag	aggtgacatg	2640
tcaagcaacc	cagccaaaga	gaccttcaca	acaggcctcg	atgctcccag	gaatcttcga	2700
cgtgtttccc	agacagataa	cagcatcacc	ctggaatgga	ggaatggcaa	ggcagctatt	2760
gacagttaca	gaattaagta	tgccccatc	tctggagggg	accacgctga	ggttgatggt	2820
ccaaagagcc	aacaagccac	aacaaaaacc	acactcacag	gtctgaggcc	gggaactgaa	2880
tatgggattg	gagtttctgc	tgtgaaggaa	gacaaggaga	gcaatccagc	gaccatcaac	2940
gcagccacag	agttggacac	gccaaggac	cttcagggtt	ctgaaactgc	agagaccagc	3000
ctgaccctgc	tctggaagac	accgttggcc	aaatttgacc	gctaccgcct	caattacagt	3060
ctccccacag	gccagtgggt	gggagtgcag	cttccaagaa	acaccacttc	ctatgtcctg	3120
agaggcctgg	aaccaggaca	ggagtacaat	gtcctcctga	cagccgagaa	aggcagacac	3180
aagagcaagc	ccgcacgtgt	gaaggcatcc	actgaacaag	cccctgagct	ggaaaacctc	3240
accgtgactg	aggttggtg	ggatggcctc	agactcaact	ggaccgcggc	tgaccaggcc	3300
tatgagcact	ttatcattca	ggtgcaggag	gccaacaagg	tggaggcagc	tcggaacctc	3360
accgtgcctg	gcagccttcg	ggctgtggac	ataccgggcc	tcaaggctgc	tacgccttat	3420
acagtctcca	tctatgggg	gatccagggc	tatagaacac	cagtgtcttc	tgctgaggcc	3480

tccacagggg	aaactcccaa	tttgggagag	gtcgtggtgg	ccgaggtggg	ctgggatgcc	3540
ctcaaactca	actggactgc	tccagaaggg	gcctatgagt	actttttcat	tcaggtgcag	3600
gaggctgaca	cagtagaggg	agcccagaac	ctcaccgtcc	caggaggact	gaggtccaca	3660
gacctgcctg	ggctcaaagc	agccactcat	tataccatca	ccatccgcgg	ggtcactcag	3720
gacttcagca	caaccctct	ctctgttgaa	gtcttgacag	aggaggttcc	agatatggga	3780
aacctcacag	tgaccgaggt	tagctgggat	gctctcagac	tgaactggac	cagccagat	3840
ggaacctatg	accagtttac	tattcaggtc	caggaggctg	accaggtgga	agaggctcac	3900
aatctcacgg	ttcctggcag	cctgcgttcc	atggaaatcc	caggcctcag	ggctggcact	3960
ccttacacag	tcaccctgca	cggcgaggtc	aggggccaca	gcactcgacc	ccttgctgta	4020
gaggtcgtca	cagaggatct	cccacagctg	ggagatttag	ccgtgtctga	ggttggtgg	4080
gatggcctca	gactcaactg	gaccgcagct	gacaatgcct	atgagcactt	tgtcattcag	4140
gtgcaggagg	tcaacaaagt	ggaggcagcc	cagaacctca	cgttgccctgg	cagcctcagg	4200
gctgtggaca	tcccgggcct	cgaggctgcc	acgccttata	gagtctccat	ctatgggggtg	4260
atccggggct	atagaacacc	agtactctct	gctgaggcct	ccacagccaa	agaacctgaa	4320
attggaaact	taaatgtttc	tgacataact	cccagagagct	tcaatctctc	ctggatggct	4380
accgatggga	tcttcgagac	ctttaccatt	gaaattattg	attccaatag	gttgctggag	4440
actgtggaat	ataatatctc	tggtgctgaa	cgaactgcc	atatctcagg	gctacccct	4500
agtactgatt	ttattgtcta	cctctctgga	cttgctccca	gcatccggac	caaaaccatc	4560
agtgccacag	ccacgacaga	ggccctgccc	cttctggaaa	acctaaccat	ttccgacatt	4620
aatccctacg	ggttcacagt	ttcctggatg	gcatcggaga	atgcctttga	cagctttcta	4680
gtaacgggtg	tggattcttg	gaagctgctg	gacccccagg	aattcacact	ttcaggaacc	4740
cagaggaagc	tggagcttag	aggcctcata	actggcattg	gctatgaggt	tatggtctct	4800
ggcttcaccc	aagggcatca	aaccaagccc	ttgagggctg	agattgttac	agaagccgaa	4860
ccggaagttg	acaaccttct	ggtttcagat	gccaccccag	acggtttccg	tctgtcctgg	4920
acagctgatg	aaggggtctt	cgacaatttt	gttctcaaaa	tcagagatac	caaaaagcag	4980
tctgagccac	tggaaataac	cctacttgcc	cccgaacgta	ccagggactt	aacaggtctc	5040
agagaggcta	ctgaatacga	aattgaactc	tatggaataa	gcaaaggaag	gcgatcccag	5100
acagtcagtg	ctatagcaac	aacagccatg	ggctccccaa	aggaagtcac	tttctcagac	5160
atcactgaaa	attcggctac	tgtcagctgg	agggcaccca	cggcccaagt	ggagagcttc	5220

```

cggattacct atgtgcccac tacaggaggt acaccctcca tggtaactgt ggacggaacc 5280
aagactcaga ccaggctggt gaaactcata cctggcgtgg agtaccttgt cagcatcatc 5340
gccatgaagg gctttgagga aagtgaacct gtctcagggt cattcaccac agctctggat 5400
ggcccatctg gcctggtgac agccaacatc actgactcag aagccttggc cagggtggcag 5460
ccagccattg ccactgtgga cagttatgtc atctcctaca caggcgagaa agtgccagaa 5520
attacacgca cgggtgtccg gaacacagtg gagtatgtct tgaccgacct cgagcctgcc 5580
acggaataca cactgagaat ctttgagag aaagggcccc agaagagctc aaccatcact 5640
gccaagttca caacagacct cgattctcca agagacttga ctgctactga ggttcagtcg 5700
gaaactgccc tccttacctg gcgaccccc cgggcatcag tcaccggtta cctgctggtc 5760
tatgaatcag tggatggcac agtcaaggaa gtcattgtgg gtccagatac cacctcctac 5820
agcctggcag acctgagccc atccaccac tacacagcca agatccaggc actcaatggg 5880
ccctgagga gcaatatgat ccagaccatc ttcaccacaa ttggactcct gtacccttc 5940
cccaaggact gctccaagc aatgctgaat ggagacacga cctctggcct ctacaccatt 6000
tatctgaatg gtgataaggc tcaggcgctg gaagtcttct gtgacatgac ctctgatggg 6060
ggtggatgga ttgtgttcct gagacgcaaa aacggacgcg agaacttcta caaaactgg 6120
aaggcatatg ctgctggatt tggggaccgc agagaagaat tctggcttgg gctggacaac 6180
ctgaacaaaa tcacagccca ggggcagtac gagctccggg tggacctgcg ggaccatggg 6240
gagacagcct ttgctgtcta tgacaagttc agcgtgggag atgccaagac tcgctacaag 6300
ctgaagggtg aggggtacag tgggacagca ggtgactcca tggcctacca caatggcaga 6360
tccttctcca cctttgacaa ggacacagat tcagccatca ccaactgtgc tctgtcctac 6420
aaaggggctt tctggtacag gaactgtcac cgtgtcaacc tgatggggag atatggggac 6480
aataaccaca gtcagggcgt taactggttc cactggaagg gccacgaaca ctcaatccag 6540
tttgctgaga tgaagctgag accaagcaac ttcagaaatc ttgaaggcag gcgcaaacgg 6600
gca 6603

```

<210> 56

<211> 2201

<212> PRT

<213> Homo sapiens

<400> 56

Met	Gly	Ala	Met	Thr	Gln	Leu	Leu	Ala	Gly	Val	Phe	Leu	Ala	Phe	Leu
1				5					10					15	

Ala Leu Ala Thr Glu Gly Gly Val Leu Lys Lys Val Ile Arg His Lys  
20 25 30

Arg Gln Ser Gly Val Asn Ala Thr Leu Pro Glu Glu Asn Gln Pro Val  
35 40 45

Val Phe Asn His Val Tyr Asn Ile Lys Leu Pro Val Gly Ser Gln Cys  
50 55 60

Ser Val Asp Leu Glu Ser Ala Ser Gly Glu Lys Asp Leu Ala Pro Pro  
65 70 75 80

Ser Glu Pro Ser Glu Ser Phe Gln Glu His Thr Val Asp Gly Glu Asn  
85 90 95

Gln Ile Val Phe Thr His Arg Ile Asn Ile Pro Arg Arg Ala Cys Gly  
100 105 110

Cys Ala Ala Ala Pro Asp Val Lys Glu Leu Leu Ser Arg Leu Glu Glu  
115 120 125

Leu Glu Asn Leu Val Ser Ser Leu Arg Glu Gln Cys Thr Ala Gly Ala  
130 135 140

Gly Cys Cys Leu Gln Pro Ala Thr Gly Arg Leu Asp Thr Arg Pro Phe  
145 150 155 160

Cys Ser Gly Arg Gly Asn Phe Ser Thr Glu Gly Cys Gly Cys Val Cys  
165 170 175

Glu Pro Gly Trp Lys Gly Pro Asn Cys Ser Glu Pro Glu Cys Pro Gly  
180 185 190

Asn Cys His Leu Arg Gly Arg Cys Ile Asp Gly Gln Cys Ile Cys Asp  
195 200 205

Asp Gly Phe Thr Gly Glu Asp Cys Ser Gln Leu Ala Cys Pro Ser Asp  
210 215 220

Cys Asn Asp Gln Gly Lys Cys Val Asn Gly Val Cys Ile Cys Phe Glu  
225 230 235 240

Gly Tyr Ala Gly Ala Asp Cys Ser Arg Glu Ile Cys Pro Val Pro Cys  
 245 250 255  
 Ser Glu Glu His Gly Thr Cys Val Asp Gly Leu Cys Val Cys His Asp  
 260 265 270  
 Gly Phe Ala Gly Asp Asp Cys Asn Lys Pro Leu Cys Leu Asn Asn Cys  
 275 280 285  
 Tyr Asn Arg Gly Arg Cys Val Glu Asn Glu Cys Val Cys Asp Glu Gly  
 290 295 300  
 Phe Thr Gly Glu Asp Cys Ser Glu Leu Ile Cys Pro Asn Asp Cys Phe  
 305 310 315 320  
 Asp Arg Gly Arg Cys Ile Asn Gly Thr Cys Tyr Cys Glu Glu Gly Phe  
 325 330 335  
 Thr Gly Glu Asp Cys Gly Lys Pro Thr Cys Pro His Ala Cys His Thr  
 340 345 350  
 Gln Gly Arg Cys Glu Glu Gly Gln Cys Val Cys Asp Glu Gly Phe Ala  
 355 360 365  
 Gly Leu Asp Cys Ser Glu Lys Arg Cys Pro Ala Asp Cys His Asn Arg  
 370 375 380  
 Gly Arg Cys Val Asp Gly Arg Cys Glu Cys Asp Asp Gly Phe Thr Gly  
 385 390 395 400  
 Ala Asp Cys Gly Glu Leu Lys Cys Pro Asn Gly Cys Ser Gly His Gly  
 405 410 415  
 Arg Cys Val Asn Gly Gln Cys Val Cys Asp Glu Gly Tyr Thr Gly Glu  
 420 425 430  
 Asp Cys Ser Gln Leu Arg Cys Pro Asn Asp Cys His Ser Arg Gly Arg  
 435 440 445  
 Cys Val Glu Gly Lys Cys Val Cys Glu Gln Gly Phe Lys Gly Tyr Asp  
 450 455 460  
 Cys Ser Asp Met Ser Cys Pro Asn Asp Cys His Gln His Gly Arg Cys  
 465 470 475 480

Val	Asn	Gly	Met	Cys	Val	Cys	Asp	Asp	Gly	Tyr	Thr	Gly	Glu	Asp	Cys	
				485					490					495		
Arg	Asp	Arg	Gln	Cys	Pro	Arg	Asp	Cys	Ser	Asn	Arg	Gly	Leu	Cys	Val	
			500					505					510			
Asp	Gly	Gln	Cys	Val	Cys	Glu	Asp	Gly	Phe	Thr	Gly	Pro	Asp	Cys	Ala	
		515					520					525				
Glu	Leu	Ser	Cys	Pro	Asn	Asp	Cys	His	Gly	Gln	Gly	Arg	Cys	Val	Asn	
	530					535					540					
Gly	Gln	Cys	Val	Cys	His	Glu	Gly	Phe	Met	Gly	Lys	Asp	Cys	Lys	Glu	
545					550					555					560	
Gln	Arg	Cys	Pro	Ser	Asp	Cys	His	Gly	Gln	Gly	Arg	Cys	Val	Asp	Gly	
				565					570					575		
Gln	Cys	Ile	Cys	His	Glu	Gly	Phe	Thr	Gly	Leu	Asp	Cys	Gly	Gln	His	
			580					585					590			
Ser	Cys	Pro	Ser	Asp	Cys	Asn	Asn	Leu	Gly	Gln	Cys	Val	Ser	Gly	Arg	
		595					600					605				
Cys	Ile	Cys	Asn	Glu	Gly	Tyr	Ser	Gly	Glu	Asp	Cys	Ser	Glu	Val	Ser	
	610					615					620					
Pro	Pro	Lys	Asp	Leu	Val	Val	Thr	Glu	Val	Thr	Glu	Glu	Thr	Val	Asn	
625					630					635					640	
Leu	Ala	Trp	Asp	Asn	Glu	Met	Arg	Val	Thr	Glu	Tyr	Leu	Val	Val	Tyr	
				645					650					655		
Thr	Pro	Thr	His	Glu	Gly	Gly	Leu	Glu	Met	Gln	Phe	Arg	Val	Pro	Gly	
			660					665					670			
Asp	Gln	Thr	Ser	Thr	Ile	Ile	Gln	Glu	Leu	Glu	Pro	Gly	Val	Glu	Tyr	
		675					680					685				
Phe	Ile	Arg	Val	Phe	Ala	Ile	Leu	Glu	Asn	Lys	Lys	Ser	Ile	Pro	Val	
	690					695					700					



Ser	Ala	Arg	Val	Ala	Thr	Tyr	Leu	Pro	Ala	Pro	Glu	Gly	Leu	Lys	Phe	705	710	715	720
Lys	Ser	Ile	Lys	Glu	Thr	Ser	Val	Glu	Val	Glu	Trp	Asp	Pro	Leu	Asp	725	730	735	
Ile	Ala	Phe	Glu	Thr	Trp	Glu	Ile	Ile	Phe	Arg	Asn	Met	Asn	Lys	Glu	740	745	750	
Asp	Glu	Gly	Glu	Ile	Thr	Lys	Ser	Leu	Arg	Arg	Pro	Glu	Thr	Ser	Tyr	755	760	765	
Arg	Gln	Thr	Gly	Leu	Ala	Pro	Gly	Gln	Glu	Tyr	Glu	Ile	Ser	Leu	His	770	775	780	
Ile	Val	Lys	Asn	Asn	Thr	Arg	Gly	Pro	Gly	Leu	Lys	Arg	Val	Thr	Thr	785	790	795	800
Thr	Arg	Leu	Asp	Ala	Pro	Ser	Gln	Ile	Glu	Val	Lys	Asp	Val	Thr	Asp	805	810	815	
Thr	Thr	Ala	Leu	Ile	Thr	Trp	Phe	Lys	Pro	Leu	Ala	Glu	Ile	Asp	Gly	820	825	830	
Ile	Glu	Leu	Thr	Tyr	Gly	Ile	Lys	Asp	Val	Pro	Gly	Asp	Arg	Thr	Thr	835	840	845	
Ile	Asp	Leu	Thr	Glu	Asp	Glu	Asn	Gln	Tyr	Ser	Ile	Gly	Asn	Leu	Lys	850	855	860	
Pro	Asp	Thr	Glu	Tyr	Glu	Val	Ser	Leu	Ile	Ser	Arg	Arg	Gly	Asp	Met	865	870	875	880
Ser	Ser	Asn	Pro	Ala	Lys	Glu	Thr	Phe	Thr	Thr	Gly	Leu	Asp	Ala	Pro	885	890	895	
Arg	Asn	Leu	Arg	Arg	Val	Ser	Gln	Thr	Asp	Asn	Ser	Ile	Thr	Leu	Glu	900	905	910	
Trp	Arg	Asn	Gly	Lys	Ala	Ala	Ile	Asp	Ser	Tyr	Arg	Ile	Lys	Tyr	Ala	915	920	925	
Pro	Ile	Ser	Gly	Gly	Asp	His	Ala	Glu	Val	Asp	Val	Pro	Lys	Ser	Gln	930	935	940	

Gln Ala Thr Thr Lys Thr Thr Leu Thr Gly Leu Arg Pro Gly Thr Glu  
945 950 955 960

Tyr Gly Ile Gly Val Ser Ala Val Lys Glu Asp Lys Glu Ser Asn Pro  
965 970 975

Ala Thr Ile Asn Ala Ala Thr Glu Leu Asp Thr Pro Lys Asp Leu Gln  
980 985 990

Val Ser Glu Thr Ala Glu Thr Ser Leu Thr Leu Leu Trp Lys Thr Pro  
995 1000 1005

Leu Ala Lys Phe Asp Arg Tyr Arg Leu Asn Tyr Ser Leu Pro Thr  
1010 1015 1020

Gly Gln Trp Val Gly Val Gln Leu Pro Arg Asn Thr Thr Ser Tyr  
1025 1030 1035

Val Leu Arg Gly Leu Glu Pro Gly Gln Glu Tyr Asn Val Leu Leu  
1040 1045 1050

Thr Ala Glu Lys Gly Arg His Lys Ser Lys Pro Ala Arg Val Lys  
1055 1060 1065

Ala Ser Thr Glu Gln Ala Pro Glu Leu Glu Asn Leu Thr Val Thr  
1070 1075 1080

Glu Val Gly Trp Asp Gly Leu Arg Leu Asn Trp Thr Ala Ala Asp  
1085 1090 1095

Gln Ala Tyr Glu His Phe Ile Ile Gln Val Gln Glu Ala Asn Lys  
1100 1105 1110

Val Glu Ala Ala Arg Asn Leu Thr Val Pro Gly Ser Leu Arg Ala  
1115 1120 1125

Val Asp Ile Pro Gly Leu Lys Ala Ala Thr Pro Tyr Thr Val Ser  
1130 1135 1140

Ile Tyr Gly Val Ile Gln Gly Tyr Arg Thr Pro Val Leu Ser Ala  
1145 1150 1155

Glu	Ala	Ser	Thr	Gly	Glu	Thr	Pro	Asn	Leu	Gly	Glu	Val	Val	Val
1160						1165					1170			
Ala	Glu	Val	Gly	Trp	Asp	Ala	Leu	Lys	Leu	Asn	Trp	Thr	Ala	Pro
1175						1180					1185			
Glu	Gly	Ala	Tyr	Glu	Tyr	Phe	Phe	Ile	Gln	Val	Gln	Glu	Ala	Asp
1190						1195					1200			
Thr	Val	Glu	Ala	Ala	Gln	Asn	Leu	Thr	Val	Pro	Gly	Gly	Leu	Arg
1205						1210					1215			
Ser	Thr	Asp	Leu	Pro	Gly	Leu	Lys	Ala	Ala	Thr	His	Tyr	Thr	Ile
1220						1225					1230			
Thr	Ile	Arg	Gly	Val	Thr	Gln	Asp	Phe	Ser	Thr	Thr	Pro	Leu	Ser
1235						1240					1245			
Val	Glu	Val	Leu	Thr	Glu	Glu	Val	Pro	Asp	Met	Gly	Asn	Leu	Thr
1250						1255					1260			
Val	Thr	Glu	Val	Ser	Trp	Asp	Ala	Leu	Arg	Leu	Asn	Trp	Thr	Thr
1265						1270					1275			
Pro	Asp	Gly	Thr	Tyr	Asp	Gln	Phe	Thr	Ile	Gln	Val	Gln	Glu	Ala
1280						1285					1290			
Asp	Gln	Val	Glu	Glu	Ala	His	Asn	Leu	Thr	Val	Pro	Gly	Ser	Leu
1295						1300					1305			
Arg	Ser	Met	Glu	Ile	Pro	Gly	Leu	Arg	Ala	Gly	Thr	Pro	Tyr	Thr
1310						1315					1320			
Val	Thr	Leu	His	Gly	Glu	Val	Arg	Gly	His	Ser	Thr	Arg	Pro	Leu
1325						1330					1335			
Ala	Val	Glu	Val	Val	Thr	Glu	Asp	Leu	Pro	Gln	Leu	Gly	Asp	Leu
1340						1345					1350			
Ala	Val	Ser	Glu	Val	Gly	Trp	Asp	Gly	Leu	Arg	Leu	Asn	Trp	Thr
1355						1360					1365			
Ala	Ala	Asp	Asn	Ala	Tyr	Glu	His	Phe	Val	Ile	Gln	Val	Gln	Glu
1370						1375					1380			

Val	Asn	Lys	Val	Glu	Ala	Ala	Gln	Asn	Leu	Thr	Leu	Pro	Gly	Ser
1385						1390					1395			
Leu	Arg	Ala	Val	Asp	Ile	Pro	Gly	Leu	Glu	Ala	Ala	Thr	Pro	Tyr
1400						1405					1410			
Arg	Val	Ser	Ile	Tyr	Gly	Val	Ile	Arg	Gly	Tyr	Arg	Thr	Pro	Val
1415						1420					1425			
Leu	Ser	Ala	Glu	Ala	Ser	Thr	Ala	Lys	Glu	Pro	Glu	Ile	Gly	Asn
1430						1435					1440			
Leu	Asn	Val	Ser	Asp	Ile	Thr	Pro	Glu	Ser	Phe	Asn	Leu	Ser	Trp
1445						1450					1455			
Met	Ala	Thr	Asp	Gly	Ile	Phe	Glu	Thr	Phe	Thr	Ile	Glu	Ile	Ile
1460						1465					1470			
Asp	Ser	Asn	Arg	Leu	Leu	Glu	Thr	Val	Glu	Tyr	Asn	Ile	Ser	Gly
1475						1480					1485			
Ala	Glu	Arg	Thr	Ala	His	Ile	Ser	Gly	Leu	Pro	Pro	Ser	Thr	Asp
1490						1495					1500			
Phe	Ile	Val	Tyr	Leu	Ser	Gly	Leu	Ala	Pro	Ser	Ile	Arg	Thr	Lys
1505						1510					1515			
Thr	Ile	Ser	Ala	Thr	Ala	Thr	Thr	Glu	Ala	Leu	Pro	Leu	Leu	Glu
1520						1525					1530			
Asn	Leu	Thr	Ile	Ser	Asp	Ile	Asn	Pro	Tyr	Gly	Phe	Thr	Val	Ser
1535						1540					1545			
Trp	Met	Ala	Ser	Glu	Asn	Ala	Phe	Asp	Ser	Phe	Leu	Val	Thr	Val
1550						1555					1560			
Val	Asp	Ser	Gly	Lys	Leu	Leu	Asp	Pro	Gln	Glu	Phe	Thr	Leu	Ser
1565						1570					1575			
Gly	Thr	Gln	Arg	Lys	Leu	Glu	Leu	Arg	Gly	Leu	Ile	Thr	Gly	Ile
1580						1585					1590			

Gly	Tyr	Glu	Val	Met	Val	Ser	Gly	Phe	Thr	Gln	Gly	His	Gln	Thr
1595						1600					1605			
Lys	Pro	Leu	Arg	Ala	Glu	Ile	Val	Thr	Glu	Ala	Glu	Pro	Glu	Val
1610						1615					1620			
Asp	Asn	Leu	Leu	Val	Ser	Asp	Ala	Thr	Pro	Asp	Gly	Phe	Arg	Leu
1625						1630					1635			
Ser	Trp	Thr	Ala	Asp	Glu	Gly	Val	Phe	Asp	Asn	Phe	Val	Leu	Lys
1640						1645					1650			
Ile	Arg	Asp	Thr	Lys	Lys	Gln	Ser	Glu	Pro	Leu	Glu	Ile	Thr	Leu
1655						1660					1665			
Leu	Ala	Pro	Glu	Arg	Thr	Arg	Asp	Leu	Thr	Gly	Leu	Arg	Glu	Ala
1670						1675					1680			
Thr	Glu	Tyr	Glu	Ile	Glu	Leu	Tyr	Gly	Ile	Ser	Lys	Gly	Arg	Arg
1685						1690					1695			
Ser	Gln	Thr	Val	Ser	Ala	Ile	Ala	Thr	Thr	Ala	Met	Gly	Ser	Pro
1700						1705					1710			
Lys	Glu	Val	Ile	Phe	Ser	Asp	Ile	Thr	Glu	Asn	Ser	Ala	Thr	Val
1715						1720					1725			
Ser	Trp	Arg	Ala	Pro	Thr	Ala	Gln	Val	Glu	Ser	Phe	Arg	Ile	Thr
1730						1735					1740			
Tyr	Val	Pro	Ile	Thr	Gly	Gly	Thr	Pro	Ser	Met	Val	Thr	Val	Asp
1745						1750					1755			
Gly	Thr	Lys	Thr	Gln	Thr	Arg	Leu	Val	Lys	Leu	Ile	Pro	Gly	Val
1760						1765					1770			
Glu	Tyr	Leu	Val	Ser	Ile	Ile	Ala	Met	Lys	Gly	Phe	Glu	Glu	Ser
1775						1780					1785			
Glu	Pro	Val	Ser	Gly	Ser	Phe	Thr	Thr	Ala	Leu	Asp	Gly	Pro	Ser
1790						1795					1800			
Gly	Leu	Val	Thr	Ala	Asn	Ile	Thr	Asp	Ser	Glu	Ala	Leu	Ala	Arg
1805						1810					1815			

Trp	Gln	Pro	Ala	Ile	Ala	Thr	Val	Asp	Ser	Tyr	Val	Ile	Ser	Tyr
1820						1825					1830			
Thr	Gly	Glu	Lys	Val	Pro	Glu	Ile	Thr	Arg	Thr	Val	Ser	Gly	Asn
1835						1840					1845			
Thr	Val	Glu	Tyr	Ala	Leu	Thr	Asp	Leu	Glu	Pro	Ala	Thr	Glu	Tyr
1850						1855					1860			
Thr	Leu	Arg	Ile	Phe	Ala	Glu	Lys	Gly	Pro	Gln	Lys	Ser	Ser	Thr
1865						1870					1875			
Ile	Thr	Ala	Lys	Phe	Thr	Thr	Asp	Leu	Asp	Ser	Pro	Arg	Asp	Leu
1880						1885					1890			
Thr	Ala	Thr	Glu	Val	Gln	Ser	Glu	Thr	Ala	Leu	Leu	Thr	Trp	Arg
1895						1900					1905			
Pro	Pro	Arg	Ala	Ser	Val	Thr	Gly	Tyr	Leu	Leu	Val	Tyr	Glu	Ser
1910						1915					1920			
Val	Asp	Gly	Thr	Val	Lys	Glu	Val	Ile	Val	Gly	Pro	Asp	Thr	Thr
1925						1930					1935			
Ser	Tyr	Ser	Leu	Ala	Asp	Leu	Ser	Pro	Ser	Thr	His	Tyr	Thr	Ala
1940						1945					1950			
Lys	Ile	Gln	Ala	Leu	Asn	Gly	Pro	Leu	Arg	Ser	Asn	Met	Ile	Gln
1955						1960					1965			
Thr	Ile	Phe	Thr	Thr	Ile	Gly	Leu	Leu	Tyr	Pro	Phe	Pro	Lys	Asp
1970						1975					1980			
Cys	Ser	Gln	Ala	Met	Leu	Asn	Gly	Asp	Thr	Thr	Ser	Gly	Leu	Tyr
1985						1990					1995			
Thr	Ile	Tyr	Leu	Asn	Gly	Asp	Lys	Ala	Gln	Ala	Leu	Glu	Val	Phe
2000						2005					2010			
Cys	Asp	Met	Thr	Ser	Asp	Gly	Gly	Gly	Trp	Ile	Val	Phe	Leu	Arg
2015						2020					2025			

Arg Lys Asn Gly Arg Glu Asn Phe Tyr Gln Asn Trp Lys Ala Tyr  
 2030 2035 2040

Ala Ala Gly Phe Gly Asp Arg Arg Glu Glu Phe Trp Leu Gly Leu  
 2045 2050 2055

Asp Asn Leu Asn Lys Ile Thr Ala Gln Gly Gln Tyr Glu Leu Arg  
 2060 2065 2070

Val Asp Leu Arg Asp His Gly Glu Thr Ala Phe Ala Val Tyr Asp  
 2075 2080 2085

Lys Phe Ser Val Gly Asp Ala Lys Thr Arg Tyr Lys Leu Lys Val  
 2090 2095 2100

Glu Gly Tyr Ser Gly Thr Ala Gly Asp Ser Met Ala Tyr His Asn  
 2105 2110 2115

Gly Arg Ser Phe Ser Thr Phe Asp Lys Asp Thr Asp Ser Ala Ile  
 2120 2125 2130

Thr Asn Cys Ala Leu Ser Tyr Lys Gly Ala Phe Trp Tyr Arg Asn  
 2135 2140 2145

Cys His Arg Val Asn Leu Met Gly Arg Tyr Gly Asp Asn Asn His  
 2150 2155 2160

Ser Gln Gly Val Asn Trp Phe His Trp Lys Gly His Glu His Ser  
 2165 2170 2175

Ile Gln Phe Ala Glu Met Lys Leu Arg Pro Ser Asn Phe Arg Asn  
 2180 2185 2190

Leu Glu Gly Arg Arg Lys Arg Ala  
 2195 2200

<210> 57

<211> 1134

<212> DNA

<213> Homo sapiens

<400> 57

atggcaactg ccctcccgcc gcgtctccag ccggtgcggg ggaacgagac cctgcgggag 60

cattaccagt acgtggggaa gttggcgggc aggctgaagg aggcctccga gggcagcacg 120

```

ctcaccaccg tgctcttctt ggtcatctgc agcttcatcg tcttggagaa cctgatgggt 180
ttgattgcc a tctggaaaaa caataaat t cacaaccgca tgtacttttt cattggcaac 240
ctggctctct gcgacctgct ggccggcatc gcttacaagg tcaacattct gatgtctggc 300
aagaagacgt tcagcctgtc tcccacggtc tggttcctca gggagggcag tatgttcgtg 360
gcccttgggg cgtccacctg cagcttactg gccatcgcca tcgagcggca cttgacaatg 420
atcaaaatga ggccttacga cgccaacaag aggcaccgcg tcttcctcct gatcgggatg 480
tgctggctca ttgccttcac gctgggcgcc ctgcccattc tgggctggaa ctgcctgcac 540
aatctccctg actgctctac catcctgccc ctctactcca agaagtacat tgccttctgc 600
atcagcatct tcacggccat cctggtgacc atcgtgatcc tctacgcacg catctacttc 660
ctggtgaagt ccagcagccg taaggtggcc aaccacaaca actcggagcg gtccatggca 720
ctgctgcgga ccgtggtgat tgtggtgagc gtgttcatcg cctgctggtc cccactcttc 780
atctctttcc tcattgatgt ggctgcagg gtgcaggcgt gccccatcct cttcaaggct 840
cagtggttca tcgtgttggc tgtgctcaac tccgccatga acccggtcat ctacacgctg 900
gccagcaagg agatgcggcg ggccttcttc cgtctggtct gcaactgcct ggtcagggga 960
cggggggccc gcgcctcacc catccagcct gcgctcgacc caagcagaag taaatcaagc 1020
agcagcaaca atagcagcca ctctccgaag gtcaaggaag acctgcccc aacagcccc 1080
tcctctgca tcatggacaa gaacgcagca cttcagaatg ggatcttctg caac 1134

```

<210> 58

<211> 378

<212> PRT

<213> Homo sapiens

<400> 58

```

Met Ala Thr Ala Leu Pro Pro Arg Leu Gln Pro Val Arg Gly Asn Glu
1           5           10           15

```

```

Thr Leu Arg Glu His Tyr Gln Tyr Val Gly Lys Leu Ala Gly Arg Leu
          20           25           30

```

```

Lys Glu Ala Ser Glu Gly Ser Thr Leu Thr Thr Val Leu Phe Leu Val
          35           40           45

```

```

Ile Cys Ser Phe Ile Val Leu Glu Asn Leu Met Val Leu Ile Ala Ile
          50           55           60

```

```

Trp Lys Asn Asn Lys Phe His Asn Arg Met Tyr Phe Phe Ile Gly Asn

```



65		70		75		80
Leu Ala Leu Cys Asp	Leu Leu Ala Gly Ile	Ala Tyr Lys Val	Asn Ile			
	85		90		95	
Leu Met Ser Gly Lys Lys Thr Phe	Ser Leu Ser Pro Thr	Val Trp Phe				
	100		105		110	
Leu Arg Glu Gly Ser Met Phe Val	Ala Leu Gly Ala Ser	Thr Cys Ser				
	115		120		125	
Leu Leu Ala Ile Ala Ile Glu Arg His	Leu Thr Met Ile	Lys Met Arg				
	130		135		140	
Pro Tyr Asp Ala Asn Lys Arg His Arg	Val Phe Leu Leu Ile Gly	Met				
	145		150		155	160
Cys Trp Leu Ile Ala Phe Thr Leu Gly	Ala Leu Pro Ile Leu Gly	Trp				
		165		170		175
Asn Cys Leu His Asn Leu Pro Asp	Cys Ser Thr Ile Leu Pro	Leu Tyr				
		180		185		190
Ser Lys Lys Tyr Ile Ala Phe Cys Ile	Ser Ile Phe Thr	Ala Ile Leu				
		195		200		205
Val Thr Ile Val Ile Leu Tyr Ala Arg	Ile Tyr Phe Leu Val	Lys Ser				
		210		215		220
Ser Ser Arg Lys Val Ala Asn His Asn	Asn Ser Glu Arg Ser	Met Ala				
		225		230		235
Leu Leu Arg Thr Val Val Ile Val Val	Ser Val Phe Ile Ala	Cys Trp				
		245		250		255
Ser Pro Leu Phe Ile Leu Phe Leu Ile	Asp Val Ala Cys Arg	Val Gln				
		260		265		270
Ala Cys Pro Ile Leu Phe Lys Ala Gln	Trp Phe Ile Val	Leu Ala Val				
		275		280		285
Leu Asn Ser Ala Met Asn Pro Val Ile	Tyr Thr Leu Ala	Ser Lys Glu				
		290		295		300

Met Arg Arg Ala Phe Phe Arg Leu Val Cys Asn Cys Leu Val Arg Gly  
305 310 315 320

Arg Gly Ala Arg Ala Ser Pro Ile Gln Pro Ala Leu Asp Pro Ser Arg  
325 330 335

Ser Lys Ser Ser Ser Ser Asn Asn Ser Ser His Ser Pro Lys Val Lys  
340 345 350

Glu Asp Leu Pro His Thr Ala Pro Ser Ser Cys Ile Met Asp Lys Asn  
355 360 365

Ala Ala Leu Gln Asn Gly Ile Phe Cys Asn  
370 375

<210> 59

<211> 1152

<212> DNA

<213> Homo sapiens

<400> 59

atggcagccc agaatggaaa caccagtttc acacccaact ttaatccacc ccaagaccat	60
gcctcctccc tctcctttaa cttcagttat ggtgattatg acctccctat ggatgaggat	120
gaggacatga ccaagacccg gaccttcttc gcagccaaga tcgtcattgg cattgcaactg	180
gcaggcatca tgctgggtctg cggcatcggg aactttgtct ttatcgctgc cctcaccgc	240
tataagaagt tgcgcaacct caccaatctg ctcatcgcca acctggccat ctccgacttc	300
ctggtggcca tcatctgctg ccccttcgag atggactact acgtggtacg gcagctctcc	360
tgggagcatg gccacgtgct ctgtgcctcc gtcaactacc tgcgcaccgt ctccctctac	420
gtctccacca atgccttgct ggccattgcc attgacagat atctcgccat cgttcacccc	480
ttgaaaccac ggatgaatta tcaaacggcc tccttcctga tcgccttggt ctggatggtg	540
tccattctca ttgccatccc atcggttac ttgcaacag aaacggtcct ctttattgtc	600
aagagccagg agaagatctt ctgtggccag atctggcctg tggatcagca gctctactac	660
aagtctact tcctcttcat ctttgggtgc gagttcgtgg gccctgtggg caccatgacc	720
ctgtgctatg ccaggatctc ccgggagctc tggttcaagg cagtccttggt gttccagacg	780
gagcagattc gcaagcggct gcgctgccgc aggaagacgg tcctgggtgct catgtgcatt	840
ctcacggcct atgtgctgtg ctgggcaccc ttctacggtt tcaccatcgt tcgtgacttc	900
ttccccactg tgttcgtgaa ggaaaagcac tacctcactg ctttctacgt ggtcagagtgc	960

atcgccatga gcaacagcat gatcaacacc gtgtgcttcg tgacgggtcaa gaacaacacc 1020  
 atgaagtact tcaagaagat gatgctgctg cactggcgctc cctcccagcg ggggagcaag 1080  
 tccagtgctg accttgacct cagaaccaac ggggtgccca ccacagaaga ggtggactgt 1140  
 atcaggctga ag 1152

<210> 60  
 <211> 384  
 <212> PRT  
 <213> Homo sapiens

<400> 60  
 Met Ala Ala Gln Asn Gly Asn Thr Ser Phe Thr Pro Asn Phe Asn Pro  
 1 5 10 15  
 Pro Gln Asp His Ala Ser Ser Leu Ser Phe Asn Phe Ser Tyr Gly Asp  
 20 25 30  
 Tyr Asp Leu Pro Met Asp Glu Asp Glu Asp Met Thr Lys Thr Arg Thr  
 35 40 45  
 Phe Phe Ala Ala Lys Ile Val Ile Gly Ile Ala Leu Ala Gly Ile Met  
 50 55 60  
 Leu Val Cys Gly Ile Gly Asn Phe Val Phe Ile Ala Ala Leu Thr Arg  
 65 70 75 80  
 Tyr Lys Lys Leu Arg Asn Leu Thr Asn Leu Leu Ile Ala Asn Leu Ala  
 85 90 95  
 Ile Ser Asp Phe Leu Val Ala Ile Ile Cys Cys Pro Phe Glu Met Asp  
 100 105 110  
 Tyr Tyr Val Val Arg Gln Leu Ser Trp Glu His Gly His Val Leu Cys  
 115 120 125  
 Ala Ser Val Asn Tyr Leu Arg Thr Val Ser Leu Tyr Val Ser Thr Asn  
 130 135 140  
 Ala Leu Leu Ala Ile Ala Ile Asp Arg Tyr Leu Ala Ile Val His Pro  
 145 150 155 160  
 Leu Lys Pro Arg Met Asn Tyr Gln Thr Ala Ser Phe Leu Ile Ala Leu  
 165 170 175

Val Trp Met Val Ser Ile Leu Ile Ala Ile Pro Ser Ala Tyr Phe Ala  
180 185 190

Thr Glu Thr Val Leu Phe Ile Val Lys Ser Gln Glu Lys Ile Phe Cys  
195 200 205

Gly Gln Ile Trp Pro Val Asp Gln Gln Leu Tyr Tyr Lys Ser Tyr Phe  
210 215 220

Leu Phe Ile Phe Gly Val Glu Phe Val Gly Pro Val Val Thr Met Thr  
225 230 235 240

Leu Cys Tyr Ala Arg Ile Ser Arg Glu Leu Trp Phe Lys Ala Val Pro  
245 250 255

Gly Phe Gln Thr Glu Gln Ile Arg Lys Arg Leu Arg Cys Arg Arg Lys  
260 265 270

Thr Val Leu Val Leu Met Cys Ile Leu Thr Ala Tyr Val Leu Cys Trp  
275 280 285

Ala Pro Phe Tyr Gly Phe Thr Ile Val Arg Asp Phe Phe Pro Thr Val  
290 295 300

Phe Val Lys Glu Lys His Tyr Leu Thr Ala Phe Tyr Val Val Glu Cys  
305 310 315 320

Ile Ala Met Ser Asn Ser Met Ile Asn Thr Val Cys Phe Val Thr Val  
325 330 335

Lys Asn Asn Thr Met Lys Tyr Phe Lys Lys Met Met Leu Leu His Trp  
340 345 350

Arg Pro Ser Gln Arg Gly Ser Lys Ser Ser Ala Asp Leu Asp Leu Arg  
355 360 365

Thr Asn Gly Val Pro Thr Thr Glu Glu Val Asp Cys Ile Arg Leu Lys  
370 375 380

<210> 61

<211> 885

<212> DNA

<213> Homo sapiens

<400> 61  
 atgctgcagg gccctggctc gctgctgctg ctcttcctcg cctcgactg ctgcctgggc 60  
 tcggcgcgcg ggctcttcct ctttggccag cccgacttct cctacaagcg cagcaattgc 120  
 aagcccatcc ctgccaacct gcagctgtgc cacggcatcg aataccagaa catgcggtg 180  
 cccaacctgc tgggccacga gaccatgaag gaggtgctgg agcaggccgg cgcttggatc 240  
 ccgctggtca tgaagcagtg ccaccggac accaagaagt tcctgtgctc gctcttcgcc 300  
 cccgtctgcc tcgatgacct agacgagacc atccagccat gccactcgct ctgcgtgcag 360  
 gtgaaggacc gctgcgcccc ggtcatgtcc gccttcggct tcccctggcc cgacatgctt 420  
 gagtgcgacc gtttccccca ggacaacgac ctttgcattc cctcgctag cagcgaccac 480  
 ctctgccag ccaccgagga agctccaaag gtatgtgaag cctgcaaaaa taaaaatgat 540  
 gatgacaacg acataatgga aacgctttgt aaaaatgatt ttgcactgaa aataaaagtg 600  
 aaggagataa cctacatcaa ccgagatacc aaaatcatcc tggagaccaa gagcaagacc 660  
 atttacaagc tgaacggtgt gtccgaaagg gacctgaaga aatcggtgct gtgggtcaaa 720  
 gacagcttgc agtgcacctg tgaggagatg aacgacatca acgcgcccta tctggtcatg 780  
 ggacagaaac aggggtggga gctggtgatc acctcggtga agcgggtggca gaaggggcag 840  
 agagagttca agcgcatctc ccgcagcatc cgcaagctgc agtgc 885

<210> 62  
 <211> 295  
 <212> PRT  
 <213> Homo sapiens

<400> 62  
 Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser His  
 1 5 10 15  
 Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln Pro Asp  
 20 25 30  
 Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Ala Asn Leu Gln  
 35 40 45  
 Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu Pro Asn Leu Leu  
 50 55 60  
 Gly His Glu Thr Met Lys Glu Val Leu Glu Gln Ala Gly Ala Trp Ile  
 65 70 75 80

Pro Leu Val Met Lys Gln Cys His Pro Asp Thr Lys Lys Phe Leu Cys  
                     85                    90                    95

Ser Leu Phe Ala Pro Val Cys Leu Asp Asp Leu Asp Glu Thr Ile Gln  
                     100                    105                    110

Pro Cys His Ser Leu Cys Val Gln Val Lys Asp Arg Cys Ala Pro Val  
                     115                    120                    125

Met Ser Ala Phe Gly Phe Pro Trp Pro Asp Met Leu Glu Cys Asp Arg  
                     130                    135                    140

Phe Pro Gln Asp Asn Asp Leu Cys Ile Pro Leu Ala Ser Ser Asp His  
                     145                    150                    155                    160

Leu Leu Pro Ala Thr Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys  
                     165                    170                    175

Asn Lys Asn Asp Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn  
                     180                    185                    190

Asp Phe Ala Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg  
                     195                    200                    205

Asp Thr Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu  
                     210                    215                    220

Asn Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys  
                     225                    230                    235                    240

Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala Pro  
                     245                    250                    255

Tyr Leu Val Met Gly Gln Lys Gln Gly Gly Glu Leu Val Ile Thr Ser  
                     260                    265                    270

Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg Ile Ser Arg  
                     275                    280                    285

Ser Ile Arg Lys Leu Gln Cys  
                     290                    295

<210> 63  
 <211> 1011  
 <212> DNA  
 <213> Homo sapiens

<400> 63  
 atggacaaa atgaacacag tactgggga ccacatgcaa agggccaatg tgccagcaga 60  
 tctgagctga gaatcatcct ggtgggcaaa acaggaactg gcaaaagtgc tgcagggaac 120  
 agcatcctca ggaagcaagc atttgaatcg aagctggggtt cccagacctt gactaagact 180  
 tgcagcaaaa gtcagggaag ctggggaaat agagagattg tcattattga cacaccagat 240  
 atgttttctt ggaaggacca ctgtgaagct ctgtacaaag aggtgcagag gtgctacttg 300  
 ctgtctgcac caggacccca tgtgctgctc ctggtgactc agctgggccg ctatacctca 360  
 caggaccagc aggtgcaca gaggtgaag gagatctttg gagaggatgc catgggacac 420  
 acaattgtcc tctttacca caaggaagac ctcaatggtg gctccctgat ggattacatg 480  
 cagactcag ataacaaagc cctaagcaag ctggtggcag catgtggtgg gcgaatctgt 540  
 gcctttaata accgtgctga agggagcaat caggatgacc aagtgaagga actaatggac 600  
 tgtattgagg atctgttgat ggagaaaaat ggtgatcact ataccaatgg gttgtacagc 660  
 ctaatacaga ggtctaaatg tggacctgtg ggatcagatg aaagagtaaa ggaattcaaa 720  
 cagagcctta taaagtacat ggaaactcaa agaagttaca cagccttggc tgaagcaaac 780  
 tgccataaaag gagccttaat caaaacacaa ctgtgtgttt tattttgtat tcagttgttt 840  
 ctcagattga taattctgtg gctttgcata ctgcacagca tgtgcaattt gttttgttgc 900  
 ttactcttta gtatgtgcaa tttattctgc agtttgctgt ttattatacc caaaaagtta 960  
 atgatatttt tgagaacagt tattagacta gaacgcaaga ctctaggtt a 1011

<210> 64  
 <211> 337  
 <212> PRT  
 <213> Homo sapiens

<400> 64  
 Met Asp Gln Asn Glu His Ser His Trp Gly Pro His Ala Lys Gly Gln  
 1 5 10 15  
 Cys Ala Ser Arg Ser Glu Leu Arg Ile Ile Leu Val Gly Lys Thr Gly  
 20 25 30  
 Thr Gly Lys Ser Ala Ala Gly Asn Ser Ile Leu Arg Lys Gln Ala Phe  
 35 40 45

Glu	Ser	Lys	Leu	Gly	Ser	Gln	Thr	Leu	Thr	Lys	Thr	Cys	Ser	Lys	Ser	50	55	60	
Gln	Gly	Ser	Trp	Gly	Asn	Arg	Glu	Ile	Val	Ile	Ile	Asp	Thr	Pro	Asp	65	70	75	80
Met	Phe	Ser	Trp	Lys	Asp	His	Cys	Glu	Ala	Leu	Tyr	Lys	Glu	Val	Gln	85	90	95	
Arg	Cys	Tyr	Leu	Leu	Ser	Ala	Pro	Gly	Pro	His	Val	Leu	Leu	Leu	Val	100	105	110	
Thr	Gln	Leu	Gly	Arg	Tyr	Thr	Ser	Gln	Asp	Gln	Gln	Ala	Ala	Gln	Arg	115	120	125	
Val	Lys	Glu	Ile	Phe	Gly	Glu	Asp	Ala	Met	Gly	His	Thr	Ile	Val	Leu	130	135	140	
Phe	Thr	His	Lys	Glu	Asp	Leu	Asn	Gly	Gly	Ser	Leu	Met	Asp	Tyr	Met	145	150	155	160
His	Asp	Ser	Asp	Asn	Lys	Ala	Leu	Ser	Lys	Leu	Val	Ala	Ala	Cys	Gly	165	170	175	
Gly	Arg	Ile	Cys	Ala	Phe	Asn	Asn	Arg	Ala	Glu	Gly	Ser	Asn	Gln	Asp	180	185	190	
Asp	Gln	Val	Lys	Glu	Leu	Met	Asp	Cys	Ile	Glu	Asp	Leu	Leu	Met	Glu	195	200	205	
Lys	Asn	Gly	Asp	His	Tyr	Thr	Asn	Gly	Leu	Tyr	Ser	Leu	Ile	Gln	Arg	210	215	220	
Ser	Lys	Cys	Gly	Pro	Val	Gly	Ser	Asp	Glu	Arg	Val	Lys	Glu	Phe	Lys	225	230	235	240
Gln	Ser	Leu	Ile	Lys	Tyr	Met	Glu	Thr	Gln	Arg	Ser	Tyr	Thr	Ala	Leu	245	250	255	
Ala	Glu	Ala	Asn	Cys	Leu	Lys	Gly	Ala	Leu	Ile	Lys	Thr	Gln	Leu	Cys	260	265	270	



Val Leu Phe Cys Ile Gln Leu Phe Leu Arg Leu Ile Ile Leu Trp Leu  
 275 280 285

Cys Ile Leu His Ser Met Cys Asn Leu Phe Cys Cys Leu Leu Phe Ser  
 290 295 300

Met Cys Asn Leu Phe Cys Ser Leu Leu Phe Ile Ile Pro Lys Lys Leu  
 305 310 315 320

Met Ile Phe Leu Arg Thr Val Ile Arg Leu Glu Arg Lys Thr Pro Arg  
 325 330 335

Leu

<210> 65  
 <211> 1173  
 <212> DNA  
 <213> Homo sapiens

<400> 65  
 atgttcccca atggcaccgc ctctctctct tctctctctc ctagccccag cccgggcagc 60  
 tgcggcgaag gcggcggcag caggggcccc ggggccggcg ctgcggacgg catggaggag 120  
 ccagggcgaa atgcgtccca gaacgggacc ttgagcgagg gccagggcag cgccatcctg 180  
 atctctttca tctactccgt ggtgtgcctg gtggggctgt gtgggaactc tatggtcatc 240  
 tacgtgatcc tgcgctatgc caagatgaag acggccacca acatctacat cctaaatctg 300  
 gccattgctg atgagctgct catgctcagc gtgcccttcc tagtcacctc cacgttggtg 360  
 cgccactggc ccttcgggtg gctgctctgc cgctcgtgc tcagcgtgga cgcggtcaac 420  
 atgttcacca gcatctactg tctgactgtg ctgagcgtgg accgctacgt ggccgtggtg 480  
 catcccatca aggcgccccg ctaccgccgg cccaccgtgg ccaaggtagt aaacctgggc 540  
 gtgtgggtgc tatcgctgct cgtcatcctg cccatcgtgg tcttctctcg caccgcggcc 600  
 aacagcgacg gcacgggtggc ttgcaacatg ctcatgccag agcccgtca acgctggctg 660  
 gtgggcttcg tgttgtacac atttctcatg ggcttcctgc tgcccgtggg ggctatctgc 720  
 ctgtgctacg tgctcatcat tgctaagatg cgcatgggtg ccctcaaggc cggctggcag 780  
 cagcgcaagc gctcggagcg caagatcacc ttaatggtga tgatggtggt gatggtgttt 840  
 gtcactctgt ggatgccttt ctacgtgggtg cagctgggtca acgtgtttgc tgagcaggac 900  
 gacgccacgg tgagtcagct gtcggtcatc ctcggtatg ccaacagctg cgccaacccc 960

atcctctatg gctttctctc agacaacttc aagcgctctt tccaacgcat cctatgcctc 1020  
 agctggatgg acaacgccgc ggaggagccg gttgactatt acgccaccgc gctcaagagc 1080  
 cgtgcctaca gtgtggaaga cttccaacct gagaacctgg agtccggcgg cgtcttccgt 1140  
 aatggcacct gcacgtcccg gatcacgacg ctc 1173

<210> 66  
 <211> 391  
 <212> PRT  
 <213> Homo sapiens

<400> 66  
 Met Phe Pro Asn Gly Thr Ala Ser Ser Pro Ser Ser Ser Pro Ser Pro  
 1 5 10 15

Ser Pro Gly Ser Cys Gly Glu Gly Gly Gly Ser Arg Gly Pro Gly Ala  
 20 25 30

Gly Ala Ala Asp Gly Met Glu Glu Pro Gly Arg Asn Ala Ser Gln Asn  
 35 40 45

Gly Thr Leu Ser Glu Gly Gln Gly Ser Ala Ile Leu Ile Ser Phe Ile  
 50 55 60

Tyr Ser Val Val Cys Leu Val Gly Leu Cys Gly Asn Ser Met Val Ile  
 65 70 75 80

Tyr Val Ile Leu Arg Tyr Ala Lys Met Lys Thr Ala Thr Asn Ile Tyr  
 85 90 95

Ile Leu Asn Leu Ala Ile Ala Asp Glu Leu Leu Met Leu Ser Val Pro  
 100 105 110

Phe Leu Val Thr Ser Thr Leu Leu Arg His Trp Pro Phe Gly Ala Leu  
 115 120 125

Leu Cys Arg Leu Val Leu Ser Val Asp Ala Val Asn Met Phe Thr Ser  
 130 135 140

Ile Tyr Cys Leu Thr Val Leu Ser Val Asp Arg Tyr Val Ala Val Val  
 145 150 155 160

His Pro Ile Lys Ala Ala Arg Tyr Arg Arg Pro Thr Val Ala Lys Val  
 165 170 175

Val Asn Leu Gly Val Trp Val Leu Ser Leu Leu Val Ile Leu Pro Ile  
 180 185 190

Val Val Phe Ser Arg Thr Ala Ala Asn Ser Asp Gly Thr Val Ala Cys  
 195 200 205

Asn Met Leu Met Pro Glu Pro Ala Gln Arg Trp Leu Val Gly Phe Val  
 210 215 220

Leu Tyr Thr Phe Leu Met Gly Phe Leu Leu Pro Val Gly Ala Ile Cys  
 225 230 235 240

Leu Cys Tyr Val Leu Ile Ile Ala Lys Met Arg Met Val Ala Leu Lys  
 245 250 255

Ala Gly Trp Gln Gln Arg Lys Arg Ser Glu Arg Lys Ile Thr Leu Met  
 260 265 270

Val Met Met Val Val Met Val Phe Val Ile Cys Trp Met Pro Phe Tyr  
 275 280 285

Val Val Gln Leu Val Asn Val Phe Ala Glu Gln Asp Asp Ala Thr Val  
 290 295 300

Ser Gln Leu Ser Val Ile Leu Gly Tyr Ala Asn Ser Cys Ala Asn Pro  
 305 310 315 320

Ile Leu Tyr Gly Phe Leu Ser Asp Asn Phe Lys Arg Ser Phe Gln Arg  
 325 330 335

Ile Leu Cys Leu Ser Trp Met Asp Asn Ala Ala Glu Glu Pro Val Asp  
 340 345 350

Tyr Tyr Ala Thr Ala Leu Lys Ser Arg Ala Tyr Ser Val Glu Asp Phe  
 355 360 365

Gln Pro Glu Asn Leu Glu Ser Gly Gly Val Phe Arg Asn Gly Thr Cys  
 370 375 380

Thr Ser Arg Ile Thr Thr Leu  
 385 390

<210> 67  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 67  
 tcccttggtc cactcacaga ct 22

<210> 68  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 68  
 tgtgtaaagt acggagcgaa gttg 24

<210> 69  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 69  
 tgccttgcac agcctcgcaa tgagc 25

<210> 70  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 70  
 tgtgaaaggc acagcagtcc cga 23

<210> 71  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic primer  
  
 <400> 71  
 tcagcatggg ctgctacaac ggt 23  
  
 <210> 72  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic primer  
  
 <400> 72  
 ctcaagtctg tttcttcttc 20  
  
 <210> 73  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic antigenic peptide  
  
 <400> 73  
 Arg Arg Tyr Lys Ile His Pro Asp Phe Ser Pro Ser Val Lys Gln Cys  
 1 5 10 15  
  
 <210> 74  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
  
 <220>  
 <221> MOD\_RES  
 <222> (1)..(1)  
 <223> N-methyl anthranilic acid  
  
 <220>  
 <221> MOD\_RES  
 <222> (7)..(7)  
 <223> Norvaline

<220>

<221> MOD\_RES

<222> (8)..(8)

<223> Lys(dinitrophenol)

<220>

<223> C-term amidated

<400> 74

Xaa Pro Lys Pro Leu Ala Xaa Trp Lys

1

5